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VETERINARY MEDICINE

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Veterinary Medicine

Vol. XVI SEPTEMBER, 1921 Number 9

Editorial Comment

VACANCIES AND APPOINTMENTS IN THE VETERINARY CORPS OF THE REGULAR ARMY.

ON JUNE 30th, 1921, all reserve officers who were on active duty were returned to the inactive list due to the fact that no appropriation was provided in the annual appropriation bill for the pay of reserve officers, veterinary section, officers' reserve corps, assigned to active duty for the fiscal year terminating June 30, 1922.

There are at present 16 vacancies in the veterinary corps, regular army. Now that the regulations governing appointments to the corps have been formulated and authority granted, to hold examinations with a view to filling these vacancies. It is hoped that the date of examination will be set and that suitable applicants will present themselves for the test.

The regulations referred to in the foregoing paragraph are not yet available for general distribution. In general they provide that:

Appointments in the veterinary corps shall be made in the grade of second lieutenant from reserve veterinary officers between the ages of twenty-one and thirty years.

Examinations will be held for a specified number of vacancies. No eligible list will be maintained in the war department.

Any person eligible to take the preliminary examination may submit an application to the commander of the department or corps area in which he resides.

On dates announced by the war department, department and corps area commanders will cause the preliminary examination to be conducted for all authorized applicants in their areas.

The examination on a given date will be the same for all applicants. Instructions and questions will be prepared and distributed by the war department to department and corps area commanders, for transmission to examining boards.

Reports of preliminary examination will be forwarded to the Adjutant General of the Army, to be considered and marked by a central medical department board.

Candidates who are found qualified by the central medical department board, and who are not already members of the veterinary officers' reserve corps, will be recommended for commission as second lieutenants therein. Such candidates will be ordered to active duty under their reserve commissions to report to the medical field service school, Carlisle Barracks, Pennsylvania, or to such other place as the Surgeon General may recommend for observation and instruction.

At the expiration of a period of approximately four months' observation and instruction, candidates will be given a final examination.

As a result of the final examination, qualified candidates will be appointed second lieutenants in the veterinary corps, regular army. Candidates found not qualified, or not desiring to accept appointment in the ragular army may be ordered to their homes, and relieved from active duty, or discharged from their respective commissions in the officers' reserve corps.

ANNOUNCEMENT

The Surgeon General desires to announce that an examination has been authorized by the Secretary of War for appointments to the grade of 2nd Lieutenant in the veterinary corps of the Regular Army. Not to exceed 16 appointments will be made as the result of this examination. The date is not fixed, but the examination may be expected to occur during the next three or four months.

These examinations will be held by boards of officers convened in the various corps areas and applicants should apply to the commanding general of the corps area in which they reside for circulars of instruction, announcement of the date and all other information.

Before authority to take the examination can be given it is necessary for each candidate to file an application for commission in the Regular Army on Form No. 88 AGO. This form may be obtained at any military post or station or from the Adjutant General U. S. Army, Washington, D. C.

The information given in the application must include names of veterinary colleges attended, date of graduation, and satisfactory evidence of the required one year's experience in the practice of veterinary medicine or its equivalent in hospital work, or as an instruc- an employee of the Bureau of Animal Industor in an approved veterinary college, or as

try of the United States Department of Agriculture actively engaged in veterinary professional work, subsequent to graduation, and a complete statement of military service, if any. The application must be accompanied by evidence of citizenship, if the applicant is of foreign birth, and by certificates, based upon personal acquaintance, from at least three reputable persons as to citizenship, character, and habits. When completed the application should be forwarded through military channels to the commanding general of the corps area in case the applicant is in the military service. All others may submit their applications directly to the nearest corps area commander or to the commanding officer of any nearby military post, camp or station.

No candidate will be permitted to take the examination who will not at the probable time of appointment, between the ages of twenty-one and thirty years. The earliest limit of probable time of appointment may safely be considered as Dec. 1, 1921.

The examination follows the general requirements of AR 605-20. This publication is not available for general distribution and the extracts therefrom given below will be found of value to candidates.

The policy of the War Department to require a preliminary examination, a period of observation of four months at the Medical Department Service School, and a final or qualifying examination has been waived for this examination and the preliminary and final examinations will be combined into one.

To be eligible to take the examination a candidate must be a male citizen of the United States. He must have a satisfactory general education, must be a graduate of an acceptable veterinary college, legally authorized to confer the degree of Doctor of Veterinary Medicines, or its equivalent, and which requires students to have covered satisfactorily a four years' high school course, or its academic equivalent, as a minimum entrance requirement, and which maintains this course of instruction covering a period of four years of not less than seven months in each year. The applicant must also have had, subsequent to graduation, at least one year's experience in the practice of veterinary medicine, or its equivalent in hospital work, or as an instructor in an approved veterinary college, or as an employee of the Bureau of Animal Industry of the United States Department of Agriculture, actively engaged in veterinary professional work.

Each candidate must present to the examining board a diploma conferring upon him the degree of Doctor of Veterinary Medicine or its equivalent, or a certificate of graduation which will be returned to the candidate when it has served its purpose.

The physical examination conforms to the standards prescribed by the War Department for officers of the Regular Army. Candidates cannot be accepted subject to the performance of operations for the removal of physical defects. Candidates are also examined and investigated for moral character, adaptability and fitness for the service.

The mental examination will be written. The subjects covered and the relative weight of each follows: Anatomy, 12; physiology and histology, 10; materia medica and therapeutics, including toxicology, 8; pathology, bacteriology, and parasitology, 8; meat and dairy hygiene, 11; practice of medicine, 12; obstetrics and zootechnics, 5; chemistry and physics, 4; surgery, general, operative, dental, and of the foot, 12; veterinary preventive medicine, including animal sanitation and management, 12; and horseshoeing, including pathological shoeing, 6.

The Veterinary Corps of the Army was reorganized in 1920 and now presents an attractive career to the young civilian veterinarian to whom army life appeals. Commissions are granted in the grade of 2nd lieutenant with eligibility for promotion to 1st lieutenant after 3 years' service, captain after 7 years, major after 14 years, lieutenant-colonel after 20 years and colonel after 26 years. Veterinary officers receive the pay and allowances of other officers of corresponding grades.

CIVIL SERVICE RECLASSIFICATION BILL LAGS

When the 66th Congress closed on March 4th last, there seemed to be a very definite understanding both in the Senate and in the House of Representatives that actual legislation reclassifying the civilian government employes would be consummated promptly during the special session of the New Congress soon to be convened.

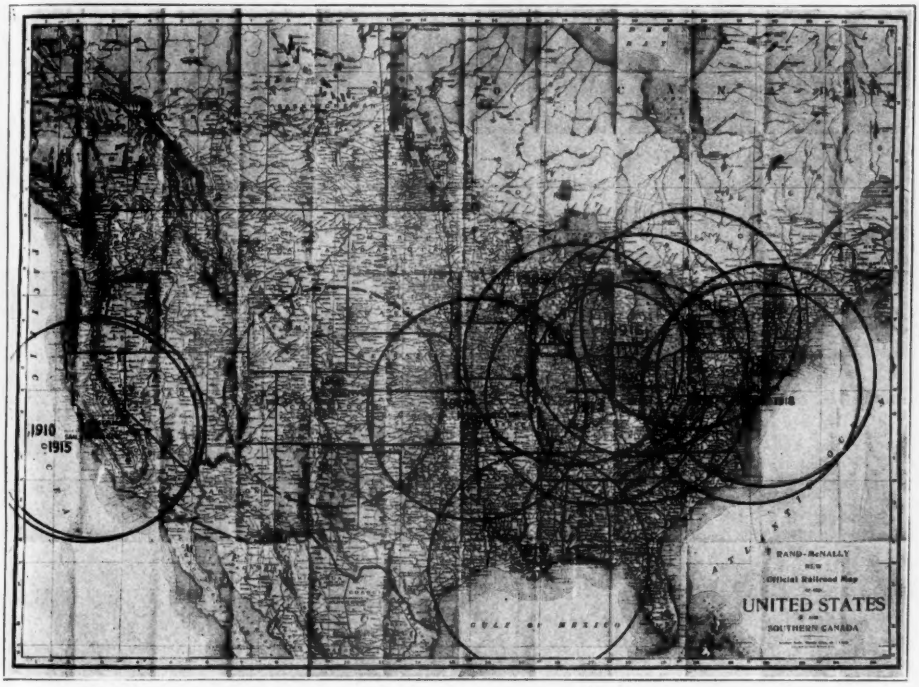
It was expected that such legislation would be similar to the Lehlbach bill heretofore discussed in these pages and that it would undo injustice done many of the scientific branches of the civil service including the veterinarians in the Bureau of Animal Industry by the original classification bill.

Two reclassification bills are now before each House of Congress. All four effect the status and salary of veterinarians in the B. A. I., and as far as their application can be forecasted, seem satisfactory, the unsatisfactory part being the slow progress they are making in the committees and the disposition of this congress to procrastinate in most matters of legislation.

The proposed salary range for veterinarians in the B. A. I. under these reclassification bills is from $1800 to $7500 a year, depending upon

the length of service, skill, proficiency and the responsibility.

The most needful thing now is to get the bill out of the committees and before the Senate and House. Veterinarians not in the government service should urge their representatives and senators to enact reclassification legislation at an early date. Such legislation will make for better public service, including the meat inspection and animal disease control. It will improve the conditions surrounding the veterinarians in the Department of Agriculture and increase their pay. It will add to the prestige and redound to the benefit of the whole veterinary profession. Support it.



FAVORED LOCALITIES

The map shows the cities in which the last thirteen meetings of the American Veterinary Medical Association have been held, and the location for the meeting this month. Assuming an arbitrary limit of 500 miles for the territory from which any given meeting will draw veterinarians for reasons of professional improvement alone, a glance at the map reveals what parts of the United States have been most favored by A. V. M. A. meetings, and what parts have been entirely neglected in the past fifteen years.

For example, including and since 1907 the extreme western section of Pennsylvania has had eight meetings and has missed five. The extreme eastern Ohio has had the same number, while western Ohio has had five meetings and missed eight. The greater portion of Illinois has had six meetings within a 500 mile radius and has missed seven. The greater part of Missouri has had four meetings in this time, and the section in which St. Louis is located has had five. The greater part of Kansas and Nebraska has had two meetings and the Denver meeting will make three. The Gulf coast region has had only one meeting in this time and the Pacific coast two.

It might be urged that a 500 mile radius is not the right one to use in measuring the local influence of A. V. M. A. meetings, but is it probably not far off. Those attending the A. V. M. A. meeting may logically be divided into three classes. First, and this constitutes the majority at any average meeting, those living within 500 miles (a night's ride by train), of the meeting; engaged for the most part in practice or other lines of private endeavor and attending the meeting at their own expense and for the good they may get from the meeting professionally. Exceedingly few of this class attend two consecutive meetings. One veterinarian who has attended a large number of veterinary meetings and who is familiar with them has expressed the opinion that there will not be a dozen strictly veterinary practitioners at the Denver meeting, who also attended the meeting in Columbus. We think he is probably not far off in his estimate.

A second class that attends the meeting is of varying size and comprises in the main practitioners who attend various meetings primarily for reasons other than the meeting itself; such as an annual vacation, the scenic interest of the trip or other business in the locality. This class often journeys far more than 500 miles to attend the meetings. In fact, they are more numerous at meetings at places of geographical or historic interest, such as those at San Francisco, New Orleans and Denver, than at meetings more centrally located, as Indianapolis, Columbus or Toronto. They are

by no means regular attendants and in the main take little part in the meetings.

A third class attending the A. V. M. A. meeting comprises those engaged in federal or state live stock sanitary work; those connected with veterinary schools, and those employed in some capacity by the various commercial firms engaged in veterinary trade. The members of this class attend the meetings at the expense of the institutions employing them, and represent primarily these institutions. In the main, they are constant in their attendance, regardless of where the meetings are held. They make up the majority of the active membrs of the committees, pretty generally fill the offices of the association and furnish much of the program. They are thoroughly familiar with the traditions and policies of the association, most of which they have determined. Their recognized ability and willingness to work for the good of the association constitutes them in large measure responsible for the splendid progress the association has made.

BOOK REVIEWS

Dairy Bacteriology.

By Orla-Jensen, Professor of Technical Biochemistry in the Polytechnic College, Copenhagen. Formerly Director of the Swiss Experimental Dairy Station. Translated from the second Danish edition, with additions and revisions by P. S. Arup, B.Sc., F. I. C., Chief Chemist to English Margarine Works (1919) Limited. Pages 180, illustrations 70, cloth, price $3.00. Published by P. Blakiston's Son & Co., Philadelphia, Pa.

This book, the latest and one of the most authentic on the subject, is of special importance to those closely interested in practical and scientific dairying, and it will be of great aid in rounding out the veterinarian's knowledge of milk, inasmuch as the work deals fully though concisely with milk defects, such as the cause of Fermenting and Gassy Milk, Premature Coagulation and Cheesy Milk, Slimy and Ropy Milk, Colored Milk, Milk With an Unclean Sour Taste, Milk With Taste of Stables, Grass, Turnips, Milk With a Soapy Taste, Bitter Taste in Milk, Metallic and Tallowy Taste, etc. These are subjects regarding which the veterinarian is frequently consulted.

Dairy inspectors, health officials and agricultural students and teachers will find the book a most valuable aid to them.

Aside from its consideration of milk, the book deals in a like manner with butter and cheese and practically all of the problems of the dairy and of dairy products. In fact, it is remarkable that the author was able to get so much useful material into so few pages.—E. L. Q.

Elementary Exercises in Physiology.

By Pierre A. Fish, D.Sc., D. V. M., Professor of Veterinary Physiology, New York State Veterinary College, Cornell University, Ithaca, N. Y. Published by Comstock Publishing Co., Ithaca, N. Y. Fourth edition, revised, cloth, 126 printed pages, interleaved for written notes. Illustrated. Price, $3.00.

This book, as indicated by its title, is essentially a laboratory manual for the study of physiology, hence it will be of the greatest interest to students and to teachers of physiology.

Its value of course, is greatest when used as a companion in laboratory work; however, it is of undoubted value to the student and teacher of physiology for elucidating the regular lectures on the subject, even though no laboratory exercises are given.

While not intended for the practitioner, there is for him much useful information in the work.

It is written and arranged in the characteristically careful manner of the author and printed on good paper, with type that does not tire the eyes.—E. L. Q.

ANIMALOLOGY

By Miss Maud Phillips, president of the Blue Cross Society, Round Hill, Springfield, Mass. Issued by the Blue Cross Society, 310 State St., Springfield, Mass. Pages, 85; price, $1.

Our belief that a friend of the lower animals is a friend of the veterinary profession is the reason for our review of this little book, for there is no gainsaying but that the "Blue Cross Society" is one of the greatest of benefactors, specializing in the welfare of the lower animals.

That which the veterinarian does which benefits animals redounds in his own uplift; therefore he should read this little book, and if he has a son ten years old or older he should pass it on to him to read and study.

The inculcation in the young human, especially the male of the species, of a sympathetic nature not only does not detract from his becoming a manly man but goes a long way toward making him such; and we believe that every boy in the land would be greatly benefited by a knowledge of the lower animals and of insect life and his spiritual welfare enhanced by the study of this little work.

The book is unique in more ways than one. It is written in the form of questions and answers, thus making it very easy to read. It demonstrates that the authoress has read and studied much, especially in the fields of natural history and zoology. It is a matter-of-fact defense against wanton, unwarranted cruelty of animals. It defends vivisection when properly performed. It gives one an insight into many traits and attributes of lower animals and insects that we in our workaday life have overlooked, nor have we had the time to delve into the larger works on the subject for this most interesting information. Moreover, it works for a higher humanity and the perusal of it can only result in mental and spiritual gain.—E. L. Q.

The Eggs of the Nematodirus Worms of Sheep

By HOWARD CRAWLEY

THE genus Nematodirus belongs to the sub-family Trichostrongylinae. The other genera of this sub-family are Hemonchus, Graphidium, Trichstrongylus, Ostertagia and Cooperia. These are particularly parasites of ruminants, and most of the species are pathogenic, some being highly so.

Thus, Neveu-Lemaire (Parasitologie des Animaux domestiques, Paris, 1912) p. 708, under the heading "Gastro-intestinal Strongylosis of the Sheep and Goat," says:

"Gastro-intestinal Strongylosis, or parasitic gastro-enteritis of the sheep and goat is a verminous affection of the fourth stomach and duodenum, caused by several species of strongyles, and particularly by the association of Hemonchus contortus and Nematodirus filicollis."

Hemonchus cortorus, the stomach worm of sheep, is notorious as an enemy of these animals. The inference from the above is that Nematodirus is equally as dangerous. Whether this is true or not is perhaps somewhat of a question, but at all events it is justifiable to conclude that Nematodirus is a dangerous parasite of sheep, and in consequence any data leading to the easy recognition of its presence is of use.

Neveu-Lemaire, as we have seen, incriminates the species Nematodirus fillicollis. But there has been a certain amount of confusion with regard to the several species of this genus, which has only recently been cleared up by H. G. May.

This author (Observations on the neamtode genus Nematodirus with descriptions of new species. Proceedings of the United States National Museum, Vol. 58, pp. 577-588, with Plates 29-35, 1920), describes nine species, of which four are new. Of these, the specoes attacking American ruminants are N. filicollis, N. spathiger, N. abnormalis, and N. furcatus.

Thus a Nematodirus found in a sheep in America would probably belong to some one of these four species. As is usual in nematodes, the specific distinctions are based mainly on the characters of the bursae and spicules of the males, and May, p. 583, says that for the species given above, "It was impossible to find characters whereby the females could be distinguished."

So far as the question of pathogenicity is concerned, this point is probably not important, since, unless the contrary is positively proven, it is safer to conclude that all the species are pathogenic. Moreover, the characters of the eggs seem to differ enough to warrant some kind of a distinction being made.

With regard to the eggs, May gives the following figures, his conclusions being based on measurements of some 350 specimens.

N. filicollis	130—200 microns long by 70— 90 microns wide.
N. spathiger	150—220 microns long by 80—110 microns wide.
N. abnormalis	160—230 microns long by 85—115 microns wide.
N. furcatus	female not known.

It is obvious that if but a single egg 175 microns long were found, it would be impossible to assign it to any one of the three species, but if one hundred were measured, an assignment to the proper species could probably be made.

The material upon which the observations to be herein recorded were based consisted of two small lots of Nematodirus worms. One of these lots was furnished by the Zoological Division of the United States Bureau of Animal Industry, and the worms were positively stated to be Nematodirus filicollis. The other lot consisted of a number of worms found in some material received at this laboratory. The serial number of this specimen was 10634.

The technic was to mount the worms in a fluid containing carbolic acid, either leaving them intact or slightly crushing them. The eggs from twenty-one worms were measured, ten from the zoological division lot, eleven from No. 10634. The following tables give the number of eggs measured from each worm, the average dimensions, and the maxima and minima of both the length and breadth.

It is perhaps of interest to note that only a small number of eggs are present in each

(*Contributions from the Bureau of Animal Industry of the Pennsylvania Department of Agriculture. New Series No. 4.*)

worm. This number varies from 8 to 29 in the cases given. It was, however, never possible to measure all of the eggs present, and in many cases only a small proportion of them. Probably, on an average, the number does not exceed thirty.

Two points may here be noted. In the first place, the average size of all the eggs measured is not the same as the average of the maximum and minimum figures. This holds for both lots, and shows that the average size should always be based on measurements of a considerable number of eggs.

In the second place, it is to be noted that the average size of the eggs varies according to the worms, being considerably greater in some than in others.

Placing the two sets of data in contrast, we obtain:

	Eggs	Mean	Length	Breadth
Zoo. Div.	185	177—100	201—133	122—96
No. 10634	179	195—105	217—163	138—80

With regard to the length, the Zoological Division material is practically identical with May's figures for filicollis, whereas the other No. 10634 might be either Spathiger or abnormalis. But the figures obtained for the breadth are throughout higher than those given by May. It is probable, however, that the breadth is more subject to fluctuation than the length. Absorption of water would increase the breadth without affecting the length.

The No. 10634 material contained several males, and these, as based on the form of the spicule tip, were spathiger. The Washington material contained but one male, not in very good condition, but so far as it was possible to determine, it also was spathiger. With regard to this material, then, the measurements of the eggs and the statement on the part of the Zoological Division itself indicate that it is filicollis, while the spicule tip of the single male suggests that it is spathiger. A final decision cannot therefore be made.

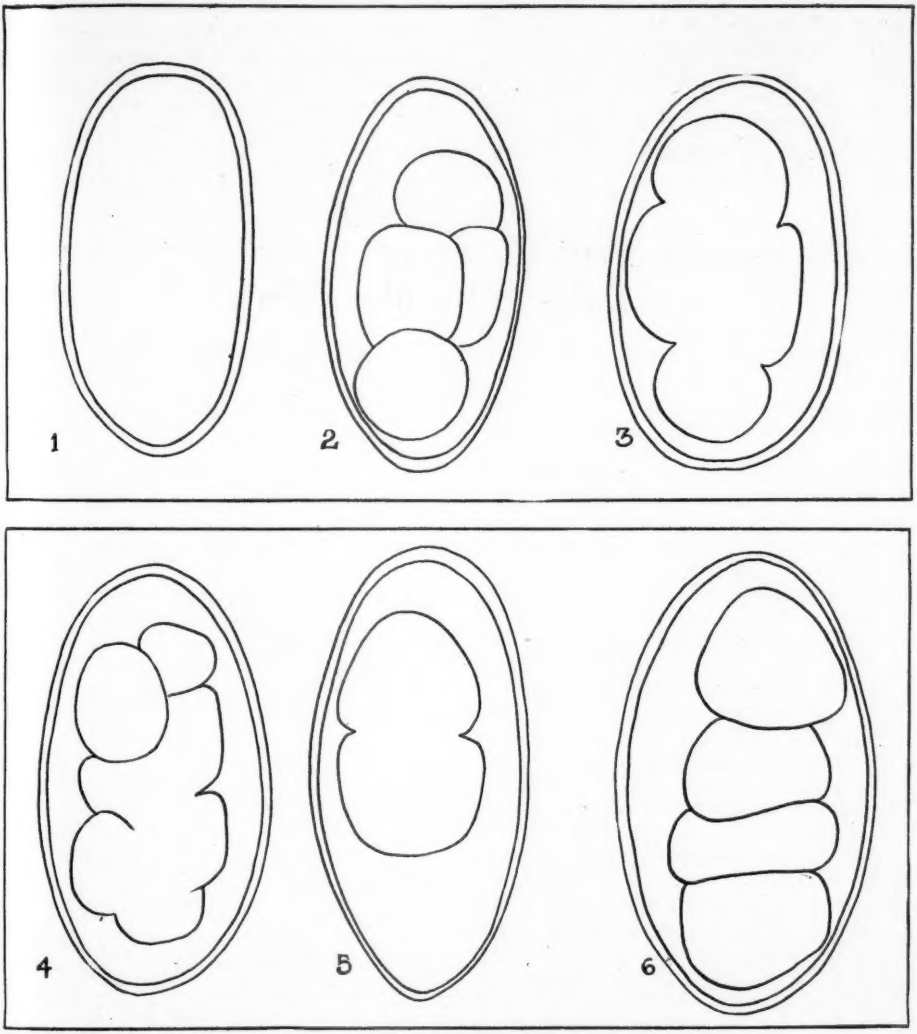
WORMS OF NO. 10634.

Worm	Number	Average	Length Max.	Length Min.	Breadth Max.	Breadth Min.
1	28	193 x 97	209	175	133	87
2	22	189 x 102	205	175	122	87
3	14	200 x 106	217	175	122	91
4	20	184 x 96	201	163	114	84
5	18	196 x 98	217	175	118	76
6	12	200 x 106	209	182	114	95
7	16	202 x 122	213	190	133	106
8	11	204 x 103	217	182	114	85
9	11	188 x 97	201	175	114	80
10	8	175 x 105	190	163	114	95
11	19	206 x 124	217	192	138	117
Total	179	195 x 105	217	163	138	80

WORMS FROM ZOOLOGICAL DIVISION, WASHINGTON

Worm	Number	Average	Length Max.	Length Min.	Breadth Max.	Breadth Min.
1	18	173 x 103	190	152	122	91
2	19	174 x 102	198	144	114	84
3	16	185 x 98	198	146	108	84
4	20	162 x 100	182	144	114	76
5	14	184 x 103	190	177	114	91
6	14	164 x 97	182	133	114	84
7	29	181 x 99	194	156	118	91
8	23	178 x 90	201	152	100	87
9	20	185 x 109	190	171	122	87
10	12	187 x 104	190	182	112	91
Total	185	177 x 100	201	133	122	76

So far as practical purposes go, however, it is enough to learn that the genus Nematodirus is present, the exact species being of only secondary interest. And, as it happens, the eggs of this genus are readily told from those of all other nematodes which harbor in sheep. The



Explanation of Figures

Figure 1. Zoological Division material. Early state, the contents a mass of granules. Actual size 176 by 95 microns.

Figure 2. Zoological Division material. Four cell stage. Slightly misshapen on account of pressure from adjacent eggs. Actual size 181 by 95 microns.

Figure 3. No. 10634 material. Four cell stage. Actual size 188 by 115 microns.

Figure 4. Zoological Division material. Six cells visible. Actual size 192 by 100 microns.

Figure 5. No. 10634 material. Two cell stage. Actual size 200 by 112 microns.

Figure 6. No. 10634 material. Several cells present. Actual size 215 by 120 microns.

only other egg with which it could possibly be confused is one which reaches a maximum length of 180 microns, and is perhaps that of Ostertagia marshalli. But this differs from that of Nematodirus in shape, having blunt ends, whereas in Nematodirus the egg tapers rather regularly from the middle to the ends, and these are rounded.

The appearance of the eggs is shown in the figures. These were all drawn from eggs still within the worm.

In the younger eggs the contents are not delimited, but consist of a mass of granules completely filling the shell. This mass is densest in the middle, thinning out nearer the periphery. Fig. 1. In the eggs which have started to segment, the contents are separated from the inner wall of the shell by an extensive clear space. Probably the eggs continue developing after being laid, but my material does not cover this point.

Preparation of Tuberculin and Theory of Tuberculin Reaction*

By M. SCHERAGO, B. S. D. V. M., *Lexington, Ky., Acting Head, Department of Bacteriology, University of Kentucky.*

EVERY veterinarian is vitally concerned at present with the greatest of all diseases that affect cattle. The statistics of bovine tuberculosis and the great problem of the eradication of this disease are so well known that they warrant no repetition or discussion at a meeting of this kind. From the veterinarian's viewpoint the most touching problem is that of diagnosis. Upon him is placed the responsibility of "culling out" not only those animals that show clinical symptoms of the disease, but also those that can be detected only by the tuberculin test. It is the purpose of this paper to discuss the preparation of the biological product used for that test and also to explain the tuberculin reaction. In order to carry out this purpose I shall discuss first the preparation of tuberculin since it is necessary to understand the nature of this product before explaining the theory of its action. I shall then discuss briefly the subject of anaphylaxis and finally the anaphylactic nature of the tuberculin reaction or the analogy of the tuberculin reaction to anaphylaxis.

The Preparation of Tuberculin

The production of a good tuberculin depends upon several factors, such as:

1. The composition of the media used.
2. Reaction of the media.
3. Time and temperature of incubation.
4. Constancy of incubation temperature.
5. Abundant oxygen supply.
6. Strain of organism employed.
7. Purity of culture and
8. Precautions in handling inoculated flasks.

Tuberculin is prepared by first inoculating Erlemneyer flasks of 500 cc. capacity containing 100 cc. glycerin meat infusion broth with a pure culture of Bacterium tuberculosis. This comparatively small amount of media in large flasks insures ample supply of oxygen which the tubercle organisms demand for optimum growth. Glycerin meat infusion broth consists of:

Chopped lean beef or veal	1 lb.
Distilled water	1000 cc.
Peptone (Witte's)	1.0%
Sodium chlorid	.5%
Glycerin	5.0%

The media is adjusted to 1.5% acid to phenolphthalein. In making the inoculations it is essential that the culture be placed on the surface of the media. The inoculated flasks are sealed with paraffin and placed in the incubator at 37° C. and are kept there for a period of six to ten weeks and sometimes even longer. During this period a heavy growth slowly develops over the surface of the medium and finally sinks to the bottom of the flasks. The cultures are then removed from the incubator and heated in the Arnold sterilizer for two and one-half hours in order to kill the bacteria.

The killed cultures are filtered through filter paper to remove the bacteria and the filtrate is evaporated to one-tenth its orig-

*Read before the Kentucky Veterinary Medical Association at Danville, Kentucky, July 7, 1921.

inal volume over a water bath at a temperature of about 80° C. This concentrated liquid is filtered through a Berkefeld filter and then diluted. To one volume of the concentrated tuberculin are added seven volumes of sterile physiological salt solution containing 0.5% carbolic acid or trioresol.

The finished product is distributed in small vials which are sealed and labeled with the amount and dosage and the date of preparation. It is tested for activity by treating known tuberculous animals, the presence of typical reactions in tuberculous animals indicating its reliability. Since tuberculin may slowly deteriorate under the influence of light and heat it should be kept in a cool, dark room until needed.

What Constitutes Tuberculin

To sum up then, tuberculin contains the products of the macerated bacteria, substances, that are not destroyed by heat, formed from the medium during the growth of the organisms or extracted from the bacteria by the glycerin, and the remains of the medium. When these substances are injected into a tuberculous animal they produce a characteristic reaction that is specific. If an equal quantity is injected into a healthy animal no such reaction occurs.

The Tuberculin Reaction An Anaphalaxis

Various theories have been advanced to explain the tuberculin reaction, but perhaps the most plausible one is that of anaphylaxis or protein sensitization. It is a well known fact that when a foreign protein is injected into an animal and then a second injection of the same kind of protein is administered about two weeks later a series of symptoms indicating poisoning will result and may be so severe as to cause the animal's death. The animal, after receiving the first injection, becomes hypersensitive to the protein injected and this condition of supersensitiveness is called anaphylaxis.

Like immunity, supersensitiveness may be natural or acquired. Instances of natural anaphylaxis are numerous. The ingestion of certain substances, such as fish, tomatoes, strawberries, etc., by normal individuals, is sometimes followed by constitutional disturbances. In a few individuals, for example, the injection of a small amount of foreign serum may give rise to constitutional disturbances.

Anaphylaxis is also similar to immunity in being specific. An animal injected with horse serum, for example, reacts to a second injection of horse serum only and not to any other serum or protein.

There is also a passive anaphylaxis. This may be shown by injecting into a normal guinea pig, serum from an anaphylactic guinea pig; the injected guinea pig becomes anaphylactic to the same protein to which the donor was anaphylactic. Anaphylaxis may be transmitted from the mother to her young and this condition may persist for some time after birth.

Artificial Production of Anaphaxis

In order to bring about an anaphylactic reaction in a guinea pig against a particular protein, the second injection must be administered at least ten days after the first. If the interval between the first and second injections is less than ten days no reaction occurs. In fact, if additional injections are made the animal becomes immune to the protein used. The same condition is produced if the animal should survive from the anaphylactic reaction produced by a second injection at the proper interval of time. Such an animal does not react to subsequent injections and is said to be antianaphylactic.

Anaphalaxis a Variety of Immunity

From what has been said thus far, it is evident that the protein injected is antigenic in nature arousing the production of certain specific antibodies within the animal body. Hence anaphylaxis is really another variety of immunity. The nature of the specific antibody concerned has been the subject of much speculation. We know that proteins can enter the circulation normally only by way of the alimentary tract and then only after they have been broken down into their constituent amino-acids. These amino-acids are taken up by the blood vessels of the intestine and are built into and form part of the protein tissue of the living body.

Proteins administered by any other channel than the digestive canal are foreign substances which the blood attempts to get rid of. Like the other tissues of the body, blood contains proteclytic enzymes for certain proteins. In fact, all the body cells possess proteolytic enzymes which enable the cell to digest the proteins of the blood. The cleavage products may be built up into and form part of the protein tissues of the living body.

It has already been stated that foreign proteins when injected into the circulation are antigenic in nature. They act as stimuli to certain cells to produce more of the enzymes necessary to decompose them so that they may be either built up into cell structure or eliminated as waste. During this process of splitting up of protein a poison, anaphylotoxin, is produced which is responsible for the symptoms of anaphylactic shock. The specific antibody in this case is, therefore, an enzyme which decomposes the protein instead of precipitating it.

The first injection of protein sensitizes the animal by stimulating the production of specific zymogen which, when activated, will decompose, in the blood stream, the protein on second injection, the products of this cleavage being toxic. The enzymes necessary to decompose the first injection of protein are present in certain cells and are formed in larger amount by those cells to meet the increased demand due to injection of an excess of protein. They are retained in the cell for a certain length of time. If the second injection of protein is given before the enzymes are excreted from the cells as waste, this is digested within the cells in the normal manner. If a third dose is given the cells adapt themselves to this increased intracellular digestion and it thus becomes normal to them; an immunity to the specific protein has been developed, due to this increased intracellular digestion. If, however, the second injection is delayed long enough, then the excess enzymes, but not all, is excreted from the cells and meets the second dose of protein in the blood stream and rapidly decomposes it there, with the production of anaphylotoxin so that more or less intoxication results. Thus the excess enzyme is used up and subsequent injections are not digested in the blood stream but within the cells as before. Hence anti-anaphylaxis is dependent on the exhaustion of the excess enzyme in the blood, and the condition is fundamentally the same as protein immunity—due to intracellular digestion in each case. (Morrey)

Sources of Foreign Proteids.

The proteins that can produce anaphylaxis may come from various sources, such as animal, vegetable and bacterial. In discussing the anaphylactic nature of the tuberculin reaction we are concerned with protein of bacterial origin. When the tubercle organism infects a susceptible animal it produces within the animal body specific proteins. These proteins constitute the antigen which stimulates the production of the specific zymogen, thus sensitizing the animal to a subsequent injection of the specific protein. Hence, when these proteins, in the form of tuberculin, are later introduced into the body a reaction results. This reaction may be either local or general, depending upon the method of introduction. In milder cases of tuberculosis the reactions are more vigorous. In such cases the bacterial proteins are being secreted slowly and so the intracellular enzymes are not used up rapidly enough. Consequently the excess of enzyme, resulting from the stimulation of the body cells by the bacterial protein, is secreted from the cells into the blood.

The Tuberculin Reaction

When the tuberculin is injected it soon encounters the excess enzyme in the blood; the bacterial protein is decomposed in the blood with the production of poisons and a vigorous reaction results. In advanced generalized cases when the condition of the patient is bad, no reaction occurs, because the enzymes are all used in decomposing the large amount of tuberculous protein constantly present in the blood. The fact that an animal which has once reacted fails to do so until several months afterward likewise depends on the fact that the excess enzyme is used in the reaction and time must elapse for a further excess to accumulate.

References: Fishberg, Pulmonary Tuberculosis; Giltner, Microbiology; Kolmer, Infection Immunity and Specific Therapy; Marshal, Microbiology; Moore, Bovine Tuberculosis; Moore, Infectious Diseases of Animals; Moore, Microbiology; Morrey, Fundamentals of Bacteriology; Muir & Ritchie, Manual of Bacteriology; Park & Williams, Pathogenic Microorganisms; Smith, Manual of Veterinary Physiology; Stitt, Practical Bacteriology, Blood Work and Animal Parasitology; White, Principles of Veterinary Medicine; Zinsser, Infection and Resistance.

Thomas Edison says: "If I were twenty-one again, I should do a great deal of reading. Six hours of serious reading each week is not much, but it may mean the difference between the $20,000 a year executive and the $25 a week clerk.

Big successes in all walks of life today are won by men of big ideas—men that are able to think constructively—and great thinkers are always well-read men—men who have profited by the studies and experiences of those who went before them.

Surprises in Co-operative Tuberculosis Eradication Work*

THE work of co-operative tuberculosis eradication is never lacking in surprises and mysteries, which require the inspector to be on the alert at all times, as evinced by recent experiences of the veterinarian detailed for duty in Star Valley, Wyoming.

From the fact that Star Valley is located in a semi-arid region of sunshine in the Rockies, just south of Yellowstone National Park, it would be reasonable to suppose there would be but few, if any, diseased animals found. To the surprise of the veterinarians assigned to the task of examining them, however, a very large number of animals reacted to the test. Another surprise came when the first lot of animals were slaughtered, for in a considerable number the inspector failed to find the "gross" lesions which are desirable to confirm the reaction of the tuberculin. The problem thus presented to the veterinarians was to determine why these animals should react to the tuberculin test and yet fail to exhibit the confirmatory lesions on post-mortem examination. Another mysterious phase of the situation was that tuberculosis apparently gained entrance and spread extensively among animals in a climate known to have a remedial effect on this disease in human beings. These questions were considered of so great importance that the Department of Agriculture detailed a pathologist of the Bureau of Animal Industry to solve the problems, if it were possible.

In the progress of this investigation, a second lot of 88 diseased animals was driven thirty or forty miles over the mountain pass from Afton, Wyoming, to a railway station at Montpelier, Idaho, to be shipped to Ogden, Utah, and were examined at the time of slaughter by the pathologist detailed for this work. Tuberculosis was found in many of the animals, but the most surprising result of the inspection was the location of the lesions, many of which were in the skin or teats and so small in size that similar infections in the first lot of cattle had escaped the notice of the inspector supervising the slaughter. Another peculiarity of the skin lesions was that none extended to the outside of the skin or showed an open sore, which some authorities would expect to find in such cases. The number of animals found in advanced stages of the disease was so small as to also cause comment among the several veterinarians present.

The pathologist then proceeded to Star Valley and continuing his investigation there found that dairying was the chief occupation of the inhabitants. He also noted that the barns and corrals were not in as sanitary condition as was considered advisable. Information was secured that the preceding fall and winter had been very scarce and feed costs high, resulting in the death of from 30 to 50 per cent of all the animals in the valley. It is reasonable to assume that the cattle badly affected with tuberculosis could not withstand these hardships and many of such were included in the number that died which would explain the small number of advanced cases found in the lot examined by the pathologist. None of the barns or corrals had been disinfected, as recommended by the Bureau of Animal Industry, therefore, many of the surviving animals became affected through small abrasions of the skin by coming in direct contact with the tubercular bacilli, as it was recalled that all skin lesions found at time of slaughter were on the parts of the bodies of the animals that might come in contact with the ground.

It was further found that many of the chickens of the valley were also affected with tuberculosis.

The investigation was at this stage temporarily discontinued. It is hoped, however, that in the not distant future the work may be continued.

*From a report of a special investigation in Star Valley, Wyoming, conducted by L. Enos Day, Chicago.

Conscious cruelty is a disease of the moral nature so wholly odious that right-minded people should fight against it as vigorously as against the typhus or the bubonic plague.—Columbus (Ohio) Dispatch.

It is the coward who beats a dog or overloads a horse; it is the cruel boy or man who stones the homeless cat, or kills birds or other creatures for the joy of killing. Cowardice and cruelty are as alien to good citizenship as they are to strength of character.—The Providence Tribune.

The Veterinary Practitioner*

By A. D. KNOWLES, Missoula, Mont.

THE Veterinary Practitioner is a necessity in every community where domestic animals are kept; he is a potential force in the protection and development of animal life; he is the confidential advisor of the owners of live stock.

The interests of the veterinary practitioner and live stock owners are mutual and the most implicit confidence in one another should prevail. The veterinary practitioner is dependent upon the live stock owners for his livelihood and he is, therefore, interested in their welfare and enjoys, with them, their periods of prosperity and sincerely sympathizes with them during periods of adversity.

Every veterinary practitioner measures his value to the community in which he lives by the standard of professional efficiency and citizenship which he maintains. The value of every person to his associates is measured by his usefulness to the community but the veterinary practitioner belongs to that class of citizens who produce and his opportunities for good are therefore greater than those who do not produce but are only consumers.

SERVICE should be the motto of every veterinary practitioner; his legal obligations to his clients require that he "use reasonable skill, care and diligence" but to attain his greatest possibilities he must use the very best that he can possibly give. With the "newer discoveries" in veterinary science, which has been developed within the last decade, we might be led to believe that the veterinary practitioner is relieved of much of the professional worry and responsibility that he was subjected to previously. With the increasing number of biological products, with instructions for their use, and the preparations which are offered for the regulation of metabolism of the animal body it would appear that the veterinary practitioner of today has only to select the remedy which seems to best suit the ailment to be treated and wait the results?

As a matter of fact the veterinary practitioner requires more skill now than ever before; previous to these "newer discoveries" veterinary practitioners were expected only to use the known methods of diagnosis and after the determination of a disease was made he studied it and from his knowledge of veterinary science, he determined the best treatment to be pursued. He must now select, from the greater number of products that are available, the one that will not be harmful and may be useful.

If he meets his obligations the veterinary practitioner of today must be a more intensive student than ever before, he must have a more thorough knowledge of the principles of veterinary science than was necessary a dozen years or more ago; his knowledge of physiology should be more thorough; he must have an intimate knowledge of animal nutrition and the various agencies that influence metabolism; he must be able to determine whether the agencies under consideration will produce superanabolism or possible katabolism and whether the animals in question need to have anything that will change the metabolic processes.

It can not be accepted as an established fact that because agencies that have a favorable influence on reproduction, for instance, or any of the other special functions of the animal body, in one state or section of the country will have a likely favorable influence on the same kind of animals in every other section. The mineral content of animals fed on corn and timothy, corn and cotton seed, and those fed on alfalfa alone or alfalfa and oats would necessarily be different and if metabolism became abnormal in the bodies of animals that had been fed on one variety of food for a long time and an agent was found that proved to be a remedy, it does not seem reasonable to suppose that the same remedy would necessarily be indicated where animals became unthrifty or abnormal while consuming feeds of a very different mineral content and under different climatic and water conditions.

And with biologics—the veterinary practitioner must have a thorough knowledge of serums, vaccines and bacterins in order to determine when to use them and when NOT to use them; sero-therapy has become a most useful aid to the veterinary practitioner but the misuse of it is fraught with great danger to his success and reputation.

Bacteriology and parasitology have been developed so much within recent years that the

*Read at meeting of the Montana Veterinary Medical Association.

veterinary practitioner who has not kept apace with the discoveries in those branches of science is not capable of recognizing certain pathological conditions, or the reasons for them, which he should. Veterinary science is a progressive science and the opportunities for research and the possibilities for discovery are unlimited but the veterinary practitioner who fails to inform himself of the discoveries which are made and how to make proper use of them, will fail to measure up to the standard of professional efficiency that his clients have a right to expect of him.

The Future of the Veterinary Practitioner.

I believe the veterinary practitioner will have greater opportunities, enjoy greater privileges and will find his vocation more desirable in the future than has ever been experienced in the past. The professional standard of the veterinarian has gradually risen and as his knowledge of the science has become recognized, among men, as one of the most useful and important sciences of the times, he is accepted on an equality in professional, social and business life.

While the economic problems of the veterinary practitioner are not what would be desired, at the present time, his income is in keeping with that of his clients, in most cases, and on the whole the veterinary practitioner has fared better than the live stock owner. The veterinarian may well console himself by casting about and seeing many persons, and frequently some of his clients, who had lived in great prosperity for years but have met with adversity just through the natural readjustments of the economical conditions of the world. These periods of business stagnation have been met with every few years in the United States and with each period some veterinarians have thought the future of their profession was doomed and deserted their profession for some other vocations which appeared more promising.

The veterinary profession is facing a greater problem today than it has ever faced before; it is that of supplying veterinary practitioners for the future years; with inadequate veterinary service the various live stock communities will seek assistance in the treatment of their animals from some other source and empirics will again spring up and quackery will thrive; when animals again become valuable their owners will attempt to minimize their losses and increase the usefulness of their animals, and in their vain efforts they will accept whatever help is available.

Are young men going to spend the time and money that is necessary for them to get a veterinary degree and then be willing to settle down into private practice where they must undergo many hardships and many disappointments incident to practice, before they can become established, make a reputation for themselves and acquire the confidence of a prospective clientele, or will they accept positions which guarantee a definite income with limited possibilities?

The possibilities of the veterinary practitioner are virtually unlimited, the inspirations of an every day busy practitioner are most encouraging, his opportunities for scientific development and usefulness to the community in which he lives are wonderful but his obligations to his clients are many and important: SERVICE is first and, if the veterinary practitioner is not willing to forego an approaching social religious, or other pleasure function to render service to a needy client, he had better follow some other vocation, for it is the man who is willing to face the storms, forego personal pleasures and render service without any hope of immediate monetary compensation that is wanted as a veterinary practitioner.

Compensation seems an important factor when the prospective veterinary practitioner is considering his vocation, in fact it was a most important factor with most of us and with most of us it was also one of the least realized for a considerable period. The matter of compensation however, is no less a factor in the veterinary profession than in other professions and in all it is usually commensurate with the service rendered. In other words, when a veterinary practitioner has proven that he renders satisfactory "care, skill and diligence" his compensation naturally follows and that in proportion to the service rendered.

In considering the vocation of veterinary practitioner there should be first taken into account the character of the work to be performed and determine whether the various phases of it are going to be objectional or not; a veterinary practitioner must love his work in order to make a success of it, otherwise there are so many trials and disagreeable things to be encountered that if they are annoying and grating on his willingness to do

them it will lessen his efficiency, if they do not cause complete failure.

Then, a veterinary practitioner in order to acquire the greatest success, must love his profession, be willing to render the most useful service, accept sacrifices ungrudgingly for the good of his clients, be an intensive student, avail himself of every available facility for improving his professional knowledge and efficiency, be willing to accept the economical readjustments that his clients must experience and his compensation and reward will be realized according to the service rendered.

Medicinal Treatment of Acute Gastric Engorgement

By E. L. Quitman, D. V. S., Chicago

Under this head, we will especially refer to those cases where horses or cows having gotten loose and gained access to the oat bin or wheat bin or corn crib, have gorged themselves.

These cases require very careful handling, in as much as heroic treatment, emergent as the case may seem, is most dangerous.

To take up the treatment in the horse, first, the writer advises the administration of from one to two quarts of liquid petrolatum (mineral oil) containing from one-half to one ounce of salicylic acid to prevent or check fermentation, administer slowly and carefully to soften and lubricate the mass.

Then the following mixture is made up:

℞ Strychnin. sulphatis .....gr. j
Pilocarpinae hydrochlor. ....gr. jss to ij
Physostigminae sulph. .....gr. jss
Aq. dest. .....ʒiij

M. et ft. sol. Sig. Administer one dram subcutaneously and repeat in twenty to thirty minutes apart.

Water should be administered very cautiously; not over one-half bucketful allowed every hour or two. Dram doses of fluid extract of nux vomica administered every two or three hours, starting not sooner than two hours after the last dose of strychnin will be beneficial.

Give nature plenty of time, and do not try to force matters any more than we have suggested.

Swabs applied to all four feet from the fetlock and covering the hoofs, kept continuously wet with water as cold as possible, will tend to prevent laminitis which is quite a common sequelae of the aforementioned condition. The mineral oil may be repeated every twelve hours in quart doses. Repeat the salicylic acid if there is a tendency to fermentation.

In cattle the condition is handled somewhat differently, although I would like to impress upon the profession that the use of eserin sulphate is of great value in cattle in arousing peristalsis of the rumen. In cattle, the total quantity administered hypodermically within two or three hours should not exceed one grain, and it is best and safest when administered in doses of one-third of a grain at twenty to thirty-minute intervals, until one grain has been administered, and when used after a few doses of the now standard treatment for impaction of the rumen in cattle—barium chlorid, tartar emetic and nux vomica—the eserin will materially hasten recovery.

To detail the treatment for engorgement under the circumstances above mentioned, in some cases the danger is so great that rumenotomy or lavage of the rumen must be performed, but referring to purely medicinal treatment, I recommend the use of mineral oil in two quart doses, containing one ounce of salicylic acid, followed up by fifteen to thirty grain doses each of barium chlorid and tartar emetic and about thirty grain doses of nux vomica. After from three to six doses of the above have been administered, recovery may be hastened by the administration of eserin sulphate as recommended above. In cattle, the administration of saline purgatives is also recommended as of value in some cases.

Gentle walking exercises should be given such animals for periods of fifteen or twenty minutes at intervals of one to two hours; being careful not to exhaust the animals and to stop the exercise if they show distress. Repeat the oil and salicylic acid as recommended for horses.

For cattle, water the same as recommended for the horse.

Abstracts of Foreign Literature

Edited by A. EICHHORN, D. V. S.

Investigations on the Etiology of Bovine Actnomycosis.

Hulphers (Svensk. Veterinar., 1920, p. 129).

The author examined 30 cases of tongue, 27 of lymph gland, 67 of maxillary and eight cases of mammary actinomycosis. According to his findings he is of the opinion that actinomycosis is not a uniformly specific disease, but that it may be caused by various microorganisms. In actinomycosis of the tongue, lung and lymph glands he found in all cases a Gram negative bacillus which is probably identical with the actino-bacillus described by Ligniere and Spitz. In five cases of actinomycosis of the maxilla the author found pure cultures of actinomyces and in 25 cases a coryne bacillus without any mixed infection, which appears to be identical with the actinomyces Israel-Kruse of man. In several cases of actinomycosis of the maxilla the bacillus pyogenes was also found. Test inoculations with this microorganism in cattle and small test animals failed to produce typical actinomycosis; nevertheless it is very possible that these bacteria have an etiological relation to the disease. Further inoculations might shed more definite light upon the question. In actinomycosis of the udder the author found staphylococcus pyogenes and on inoculating pure cultures of this organism into the udder the author produced typical actinomycosis of a progressive nature. This is probably the first instance in which the production of actinomycosis in cattle was successful by inoculation with pure cultures.

Treatment of Anthrax with Leclainche and Vallee Serum.

Mazieres and Pecard (Rev. Gen. de Med. Vet. No. 344).

An outbreak of anthrax occurred in a pasture and was controlled by protective inoculations. The vaccination was omitted on two newly purchased heifers. One of these soon developed symptoms of anthrax. The authors were immediately consulted. They confirmed the diagnosis of anthrax and inaugurated the following treatment: The animal was stabbed and received an intravenous injection of 60 cc. of anti-anthrax serum prepared by Leclainche and Vallee. Two hours later 40 cc. was given intravenously and then every two hours a similar dose was injected subcutaneously. Aside from this the patient received several times luke warm enemas. The animal remained very sick for ten days, lying continuously, refusing food with the exception of small quantities of milk and sugar water and developed a fetid diarrhea which lasted for several days. After that improvement set in and complete recovery ensued in three weeks.

The authors are of the opinion that an early treatment of this kind would save many animals affected with anthrax and with this in view in anthrax districts the stock owners should be instructed in their own interest to consult veterinarians immediately in all cases of suspected anthrax.

Experiments with Simultaneous Vaccination of Sheep Against Anthrax and Pox.

Dubois (Rev. Gen. de Med. Vet. No. 345).

In localities where anthrax and pox occurred in sheep, it was customary to allow several months to elapse between the vaccination against these two diseases. The author conducted experiments with vaccines obtained from the Pasteur Institute whether it would be possible to carry out the immunization of the animals simultaneously against the two diseases and concluded as follows:

1. Sheep tolerate well simultaneous vaccination against anthrax and pox, and the vaccination is without danger.
2. Immune bodies were produced in the animals against both of these diseases.
3. The acquired immunity proved sufficient to protect the animals against both an experimental and natural pox infection five out of six vaccinated calves proved resistant against experimental inoculations for anthrax.
4. Therefore practically in all animals a simultaneous immunity developed against two different infections; however, whether an im-

munity so acquired is of the same duration as if produced by two different vaccinations at some intervals has not been proved.

Lasting Hypersensitiveness for Mallein in a Horse Recovered from Glanders.

C. Bubberman.

As a result of a suspicious eye reaction and on a positive serum test in May and June a 9-year-old stallion was considered as infected with glanders and turned over to the laboratory. The animal was observed from Aug. 25 for a long period. The animal was well nourished and clinically showed no suspicious symptoms. The temperature taken twice daily persisted normal. The ophthalmic test applied four times during the period from Aug. 28 to Feb. 29 was always + + and on April 15 +. The complement fixation test on Aug. 28 was incomplete, with 0.1, complete with 0.2; on Sept. 1 incomplete with .02cc. and from Oct. 7 up to April 15 at five different times it was continuously negative. The agglutination test which showed in May and June a titer of 2,000 and 1,500 respectively, was on Aug. 28, 1,000, Sept. 1, 900; October, 1,000; November, 1,500, and in December, February and April steadily at 2,000.

The eye test, therefore, became strongly positive from May up to August; it remained also positive on subsequent tests. The complement fixation in May and June was slightly positive, the reaction diminished in August. At first it was suspicious, then negative and continuously remained so. The agglutination titer in May was 2,000, then dropped simultaneously with the complement fixation to its lowest titer of 900 in September. Then it rose again to 2,000 there it remained stationary.

This discrepancy in conformity of results was peculiar. The complement fixation test, which is always considered as a reliable method, being negative it was assumed that the horse might have recovered from glanders and that a hypersensitiveness to mallein remained, similar as is known to occur in man for tuberculin. On April 19 250 mg. of mallein was injected subcutaneously. The temperature rose from 38.1 to 48.3 degrees, a rise of 2 8 degrees.

At the same time there appeared to be a pronounced local reaction at the point of injection. On April 26 the horse was destroyed and autopsied. No lesions of glanders could be found. This confirms the accuracy of the complenent fixation test and also proves the hypersensitiveness of the horse for mallein.

The author is of the opinion that the horse which was kept in the stable in which glanders has repeatedly occurred, had the opportunity of taking up glanders bacilli but not in sufficient number or of too light virulence to induce an infection, but they were sufficient to induce in the blood the production of a small amount of antibodies and produce a hypersensitiveness for mallein which persisted even after the complement fixing substances diappeared from the blood.

Sero-Therapeutic Treatment of Ulcerative and Epizootic Lymphangitis Ingeueneau.

(Rev. Gen. de Med. Vet. No. 344.)

The author administers to horses affected with ulcerative lymphangitis 10 cc of serum at two-day intervals. The injections are repeated ten times. The serum is obtained from a horse which has been affected for a longer time with this disease. The local treatment is limited to dry cleansing of the ulcers; abscesses are not opened and the patients are kept in pasture. After the tenth application usually complete recovery follows. In some instances 5 or 6 more injections are given. In epizootic lymphangitis the author proceeds in the same way. He obtains the serum from an animal which has suffered for a longer time with epizootic lypmangitis and administers the serum as near as possible into the surrounding tissues of the affected parts. The patients are isolated and remain in the stalls. Surgical interference is limited to the most essential procedures. In the presence of complications with both ulcerative and epizootic lymphangitis the animal is placed in the stable in which the patients with epizootic lymphangitis are kept and is treated with the combination of both methods. The results which the author obtained with this treatment in a great number of cases in the army hospital are given as very favorable.

To reward the faithfulness of a trusting dumb animal with brutality or neglect is an evidence of coarseness and lack of character.—Los Angeles Evening Express.

Veterinary Surgery

Edited by L. A. MERILLAT, V.S.

Technic for Removal of Eye Tumor in a Cow

I WOULD like to know the technic for removing the eye in a cow. This patient was brought to my notice about two months ago.

There is a large piece of granulation tissue which seems to occupy the whole orbital fossa, and I know of no drug which would be strong enough to remove this without damaging the surrounding tissues.

This cow has just freshened, so I shall soon have to do something definite. I have never anesthetized a cow, but I was thinking of using your prescription of chloroform, ether and petroleum, in the proportions you suggest, as I do not think a local anesthetic would prove satisfactory. I shall be grateful to you if you would give me an early reply.—N. J. H.

REPLY—The treatment of this case calls for complete extirpation of the growth and to circumvent a possible recurrence on account of suspected malignancy the dissection should invade as much of the surrounding healthy tissues as may seem expedient to the operator as the operation proceeds.

Ablation of growths which invade all or part of the eye ball is a delicate procedure. It must be done with great care and must be properly executed, as regards preparation, performance and after care. Any surgical operation upon a cow that requires more than a few minutes is always a hazard because bovines do not take kindly to prolonged restraint in the recumbent position. A saline cathartic four days before the operation followed by a low diet of concentrates will give some assurance that the usual digestive complications (bloating, etc.) will be averted. The Furgeson plan of restraint is the only safe one for such an operation. That is, the cow must be cast and then stretched out at full length, the forelegs forward and the hind legs backwards. The head may be handled either with a removable lead ring or with a well-fitted halter, and if the animal has horns these must be protected against fracture. For an important operation it is usually advisable to install posts at the proper distance to secure the ropes. Existing posts are usually too near each other or too far apart to assure a good result.

We have recently removed a large actinomycoma from the jaw of a large cow with this method of restraint and the following plan of anesthesia: Twelve drams of chloral hydrate were given per os one-half hour before casting and this was followed immediately with three ounces each of chloroform and ether mixed with mineral oil per rectum. Immediately after casting the surroundings of the growth were well infiltrated with a two per cent solution of novacain. We believe this general plan of anesthesia is suitable for this case.

The operation should proceed rapidly. It may not be necessary to remove all of the eye ball, in fact such growths seldom invade the posterior half. If the posterior half is healthy it should be preserved since this tissue will serve to fill up the orbital cavity and besides operations that do not encroach right back to the optic foramen are much less serious than those in which the entire eyeball and appendages are removed. Shock and meningeal complications often follow the ablation of the entire eye ball. Although the operation will be somewhat sanguinary the blood loss will not be serious if the dissection is expedited and the cavity immediately packed and sutured. That is, wade right into the task and then attend to the bleeding by packing rather than to delay matters by attempting forcep hemostasia.

The packing should be released by cutting some of the stitches after the end of the tenth hour and then removed entirely at the end of 24 hours. Wiping out with gauze and dusting with a good desiccant powder is the best after care.

GUTTA PERCHA PACKING FOR PERMANENT OPENING

A few days ago, I was called to go about twenty miles to see a horse, which the owner suspected might have glanders. He also informed me that this horse had had a fetid nasal discharge for two years.

On arriving at the farm, I found the patient to be a very nice, heavy draft eight-year-old mare, in fair condition. After examining her mouth, I discovered that about two-thirds of the first superior left molar was gone, the remainder looked sound. There was also a hole about one and one-half inches in diameter through the hard palate, almost across to the opposite molar. After removing the hay that was packed in the nasal cavities, I discovered that the nasal septum was gone opposite the hole.

I had the horse brought to my hospital and removed the crown of the opposing molar, also washed the cavity with a mild antiseptic solution, and packed with absorbent cotton which does not seem to be very satisfactory, owing to the very large hole, and if the pack is too far up, it blocks the nasal passage.

Would you please advise me what to do with this case? Can it be successfully packed? If so, will it heal? Or, can it be permanently packed with gutta percha? Will removal of the external alveolar plate be of any benefit? —W. L. M., Quebec.

REPLY—In the absence of any information as to the cause of the perforation, it would be somewhat difficult to advise treatment with any assurance that it would permanently close up the opening. Perforations of the palate at point described are usually caused by protruding inferior molars, in which case they usually close up after removing the crown of the offending tooth. Should the opening, however, be caused by a malignant ulceration, it is very doubtful whether any form of treatment would be successful.

In either case, the best course would be packing with gutta percha of proper consistency to hold itself in place and yet be hard enough not to change shape from mastication.

With the crown of the offending tooth removed, as the querist states in this case, and in the absence of malignancy, an animal may remain useful indefinitely with such a perforation. The only inconvenience will be some difficulty in drinking.

LUGOL'S SOLUTION HYPODERMICALLY FOR HYGROMAS

I have the following case on hand and would be pleased to have your advice as to its treatment:

The patient is a mule, 4 years old. It was kicked on left hock several months ago. Considerable swelling followed this blow, but soon disappeared under stimulating liniment treatment. Lately the swelling has returned. From about three inches above and including the entire hock, the area is distended, with fluid apparently. I have hesitated to aspirate the fluid, and am wondering if some kind of a truss would be advisable. This is a very good animal and the owner is very anxious to relieve the condition if possible. There is very little lameness, and even none at times. Any information in regard to this case will be greatly appreciated—S. W. H., Illinois.

REPLY—There will be no danger whatever, in aspirating the fluid from the hock of this animal. It must be done with septic precautions, by clipping the spots selected for the perforation and then sterilizing a good sized aspirating needle with the flame of a lamp or match. If this is done, there will be no danger of complications, no matter what may be the source of the liquid.

I have recently had very good results in the treatment of several animals affected with hygromas of the hock by injecting pure Lugol's solution between the skin and the sac, and repeating the operation as soon as all reaction from the previous injection has subsided. This applies to small thoroughpins, bulging of the tarsal sheath in front and of the tendo-achillis and bog spavins that are not too tense.

In making these injections some effort should be made to distribute the solution evenly over the entire enlargement, either by moving the point of the needle about or by reinserting it several times at different points. It will be found very easy to deliver the needle between the skin and the sac by pinching up the skin between the thumb and finger and thus pushing the sac inward.

The querist here, however, does not state whether it is the internal or the external face of the hock that was injured, nor whether the distention is connected with any of the several synovials of this joint. Resulting from a kick, it is very probable that it is nothing more than a serous-sac and should yield to the above treatment.

PYEMIC ARTHRITIS, WHITE SCOURS, COLT PNEUMONIA, ETC.

Dr. Chas. Head, a breeder of draft horses on a large scale at Regina, Saskatchwan, Canada, states that he has never seen a case of these diseases occur if the coagulum in the umbilical vein of the new-born is washed out, not only external washing, but internally up to the liver.

Instead of merely tying off the umbilical cord, the umbilical vein is irrigated with an antiseptic solution, preferably bichlorid of mercury.

VETERINARY ASSOCIATION OF SASKATCHEWAN MEETS.

The summer meeting of the Veterinary Association of Saskatchewan was held at Regina, August 2, 3 and 4. The meetings of this association are unique, in that the summer meeting is devoted exclusively to surgical clinics. In view of the fact that the horse has again superseded the tractor as the farm motor in this great farming province, the meetings of this association remind one much of the good old days when horse was king everywhere.

It is very interesting to report, after having personally investigated the conditions on approximately fifty farms and after interviewing the proprietors of each of them, that the tractor has seen its best days as the chief farm motor power.

Everywhere, with not a single exception, on the great wheat and oat farms in the region of Regina, Saskatoon and Moose Jaw, tractors were found discarded, many of them exposed to weather the whole year round, never again to be rehabilitated, while horses were being looked after with scrupulous care.

Inquiry as to the reason for this change in a few years, shows that there is a unanimity of opinion as to the low cost and dependability of horse power as compared with the tractor for farm purposes. It is in its dependability that the horse excels in this region and especially in the northern farm regions where the difference of a few days in seeding may mean disaster to any given crop.

Among the interesting cases operated upon at the surgical clinics were: Botryomycosis of the Breast; Umbilical Hernia in a three-year-old gelding; Odontoma of the Nasal Cavity of of a seven-year-old mare; three cases of Laryngeal Hemoplagia on draft horses; one case of Laryngeal Hemoplagia in a Percheron stallion, four years old; a demonstration of caponizing cockerals; four Cryptorchidectomies; examination of nine heifers for sterility; and a very difficult case of dystocia in the cow, the latter being a very remarkable case.

The meeting was closed with a banquet at which the Minister of Agriculture of the Province of Saskatchewan, and Chief of the Health of a Animals' Branch of the Dominion participated.

Doctor Faucett of Regina is president of the association and Dr. R. G. Chasmer of Hanley is secretary.—L. A. M.

AMATEUR SURGERY

One night last month I received a telephone message to come at once (always at once) to a cow that was "blown." I found the animal standing grunting in a big loose box. There was no evidence of tympany on the right side, and on going to the left I found a piece of brown paper stuck to the skin over the paunch. "What have you been doing?" I asked the owner. "Have you stabbed the cow?" "Yes," said he; "I stabbed her." "What with?" "My pocket knife." "But that is no good," I replied; "you have to put a tube in." "I put a tube in," was the answer. "What sort of a tube?" was the next query. "A cigarette holder." His tube had gone between skin and paunch, and the slit from the knife in the rumen had allowed the stinking gases from the rumen to escape under the skin, and the cow was now affected with subcutaneous emphysema from her poll to her buttocks. In front of the shoulders and on the croup she felt like a bag of feathers. There was really not much tympany, but to prevent any further escape of gas under the skin I pushed in a trocar and canula and allowed the latter to remain in position all night. I gave the usual hyposulphite and aperient, and next day the cow was chewing her cud and anxious for food, but the gas under the skin did not disappear for several days. I asked the farmer where he learned all about stabbing cows, and he informed me that he had read it in a book which he had bought, but which he did not mean to consult any more.—W. R. Davis, M. R. C. V. S., in The Veterinary News

Cattle Practice

Edited by JOHN FRANCIS DE VINE, D. V. S.

Professor of Bovine Medicine, New York State Veterinary College at New York University, New York City.

Orchitis in Bull Possibly Due to Vaginal Infection

A client of mine borrowed a valuable bull, three years old, known to be a sure breeder, used him for several months with eight cows, but failed to get them with calf, although each one was served several times. Two months ago, the bull was noticed to be sluggish, ate little and showed considerable stiffness in hind quarters. These symptoms subsided gradually in a few days, and my client thought the bull had recovered.

Just a week after the appearance of the above symptoms it was noticed the scrotum of this bull was greatly enlarged. I was immediately called.

On examination, I found the left testicle swollen to twice its normal size, with the cord enlarged to the thickness of a man's wrist. It was hot but not painful on pressure. The right testicle was also slightly enlarged. The animal seemed remarkably free from pain, would eat heartily and walked with but little difficulty. Respiration slightly accelerated, temperature 103.4° F. Even in this condition, he was willing to serve when in the herd.

I diagnosed orchitis, and treated him accordingly. Bathed the scrotum and suspended it after applying antiphogistine. Physic, fever mixture, thexamethylene, and later potasium iodid were prescribed.

The bull slowly recovered, regained a good appetite, but testicles still retain their enormous proportions. The bull was returned to its owner.

Two weeks ago, this same client bought a thousand-dollar shorthorn bull to breed to his cows. He reported today that this bull's testicles are swelling also, although not pronounced. I have not seen this case as yet.

Please diagnose and outline treatment for the condition described in case number one. Could this condition be contagious? Will the first bull remain barren? There is no evidence of contagious abortion in the herd.—A. C. B., Illinois.

REPLY—Your diagnosis of orchitis is in all probability quite correct, but as to its cause, unless plainly mechanical, that is a thing not easily and definitely answered. Usually a definite diagnosis of the case is made only after the organs have been bacteriologically examined.

I would refer you to my article on Impediments of the Bull in the May, 1920, number, Vol. 15, No. 5, of VETERINARY MEDICINE.

The fact that the second bull's testicles are swelling may indicate that some of the cows in this herd are suffering with a virulent infection that is being transmitted to the bull, and I would recommend that a careful bacteriological study be made of the cervical and vaginal flora of each cow, unless by clinical examination one or more of the cows is plainly incriminated, but even then the other cows that show no produced changes of the internal genitals may have recently become infected and be in need of abortive treatment in the way of douching and bacterins.

It seems highly probable that the left testicle of the bull No. 1 is hopelessly destroyed. It would be interesting if cultures from this testicle could be taken and compared with the information you might get from your examination of your cows. It looks very much like abortive infection. Information that we have gathered during the past year in our sterility work and our laboratory findings indicate very clearly that special bacterins are very essential in some cases and in others positively specific for the control and relief of these conditions.

I hope to be able to give our experience with these problems to the profession in a paper in the near future.

MASSAGE OF OVARY WILL FREQUENTLY INDUCE ESTRUM.

I have under my treatment a very valuable Holstein cow seven years old, that freshened two years ago and since then has not had a heat period.

I made a very thorough examination and found the right ovary only about two-thirds the size of the left one, which was what I would call normal. All the other parts seemed normal. I began treatment by gently massaging the right ovary especially. Every seven to ten days I gave her Yohimbehe in full doses for the first thirty days.

There is no vaginitis, cervicitis, metritis, catarrh of the uterus or cysts present. But the last time (fifth) I massaged her, I got a small amount of blood-stained mucous through the cervix. I have never irrigated the uterus as I thought that was not necessary.

What have I left undone that is possible to help this cow?—L. L. D., Ohio.

REPLY—In all probability you are following out the right treatment. It is barely possible that the small amount of blood-stained mucous which you got through the cervix the last time you massaged the cow was estrual mucous and she might have had a mild heat without being noticed. If she has not shown estrum by this time I would advise putting her on a treatment of corpus luteum extract.

ABORTION IN COWS EASILY PRODUCED IN EARLY PREGNANCY.

One of my clients who raises pure-bred Herefords, had the misfortune of having one of his neighbor's grade bulls get into his herd and get two of his choice heifers with calf. They have been pregnant about two months. He does not like to waste their valuable time raising grade calves.

I would like to know if there is a safe way of causing these heifers to abort, and if it is advisable to do this.—W. F., North Dakota.

REPLY—It is rather a simple and safe operation to produce abortion in the cow up to the third, possibly the fourth month of pregnancy by simply squeezing out the corpus luteum of pregnancy.

The procedure is to locate the uterus through the rectum with one hand by drawing back the cervix with the other hand through the vagina, either by grasping it with the fingers or an instrument. Determine which horn is pregnant, locate the ovary, squeeze out the corpus luteum and the animal usually aborts in seventy-two hours.

If, however, the animal is pregnant more than three or three and a half months it may be necsesary to break down the seal and dilate the cervix slightly in addition to removing the corpus luteum.

An objection to causing abortion, after the fourth month in addition to its being more difficult or impossible to reach the ovary and press out the corpus luteum, the fetal membranes are more firmly attached to the uterus and consequently may not come away as easily and as clean and do so little damage to the uterus as is the case when abortion takes place earlier. However, I have on a few occasions after a thorough understanding with the owner aborted animals that were five months pregnant by breaking down the seal, dilating the cervix and irrigating the uterus with a small amount of a weak solution of non-irritating antiseptic, with no apparent harm to the cow.

ACUTE INDIGESTION IN CALF RESEMBLES HEAT STROKE

I was called on July 19th, about 3 p. m. to see a calf about four months old, which is valued at several thousand dollars. Upon my arrival, I could find neither the owner or an attendant from whom I could get a history of the case.

This calf was in a separate pen, as were several others in the same barn, with an abundance of ventilation, etc., but this one was panting considerably, had a temperature of 105.3° F., and mucous membranes highly injected.

I made a diagnosis of heat prostration and gave sterile camphorated oil and turned the hose on him for a few minutes, when I noticed that he had quite a cough, so I discontinued the water and was examining him for some other complications when the owner came in.

He informed me that this particular animal was far more valuable than anything he had and that he was quite worried about him as he had been breathing hard for a couple of days, which he thought was caused from some slight bronchial trouble, but was gradually getting worse.

As I had been unable to find any other complications, I advised him to call in some other veterinarian. I awaited the arrival of the other veterinarian, which was about one hour,

and he thought there was something more than heat prostration, but failed to find it. I then took the temperature again and to my surprise it was 101.5°, but the breathing was much improved.

This calf has never been outside of the barn, and is fed ground feed and alfalfa hay and is given six pounds of whole milk three times daily. He devours the milk very rapidly and bloats and has become quite pot bellied and the herdsman thought it was caused by drinking too much water and has taken the tongue out of the drinking cup and allows him only what water he thinks he should have, which is about the same as the amount of milk given.

The last few days have been much cooler and the calf appeared fine, but the owner noticed him breathing harder last night and again took his temperature and found it 105° F. I was called and again repeated the same treatment and in about three-fourths of an hour the calf seemed much improved.

Was my diagnosis right, and what do you recommend in the way of treatment to prevent a recurrence?—L. H. C., Wisconsin.

REPLY—The case you describe is not typical of any particular disease or ailment that we are acquainted with, consequently it is highly probable that yourself and the other veterinarian can come much nearer making a diagnosis than any one else can. This is surely so of those who have not seen the case. The high temperature, and the rapid breathing might at once suggest septicemia hemorrhagica. These symptoms also coupled with the fact that the calf is drinking 18 pounds of whole milk a day and apparently not digesting it well, suggests acute indigestion. A condition which I describe in an article, in the March, 1919, VETERINARY MEDICINE.

In the cases of acute indigestion in milk-fed calves, on a warm day it is not uncommon to have the temperature to reach 106° F. The possibility of parasites, new growths or foreign bodies cannot be eliminated without considerable observation.

Your treatment is apparently all right for immediate relief, but if solely of a digestive disorder you will, of course, then need to give special attention to this; for which we might suggest keeping solid food from the calf, even reducing the quantity of milk for a time and diluting it with equal parts of warm water, adding sufficient cod liver oil or olive oil to keep the bowels slightly laxative, stimulants and stomachics are also indicated.

TREATMENT FOR WHITE SCOUR IN CALVES.

Will you please advise me of the best treatment for white scours in calves?—F. L. V., Ala.

REPLY—Calf Scour is usually best controlled by the strictest kind of sanitation, in a herd in which it appears. Each calf dropped should be given a dose of oil containing a safe antiseptic, a large dose (30 cc) of anti-white scour serum and an injection of bacterins. It should be kept from getting any milk for at least twelve hours. If any symptoms of the ailment develop the serum should be repeated every hour or two depending upon the individual case.

In case the calf has sufficient vitality to nurse, the udder should be made as nearly as practicable, surgically clean, and calf allowed to nurse only a little at a time. If pail-fed the same rule should be followed.

All of this is covered quite completely in "White Scour in Calves" in Veterinary Medicine for July, 1919.

IMPERFECT QUARTERS OF THE UDDER IN HEIFERS.

I have been asked to treat a heifer that calved about a month ago, and gives milk from only one teat. What shall I do for her?

REPLY—It is not uncommon to have heifers freshen with defective quarters. In some cases one quarter only is involved, while in others all quarters may be involved. When the teats are normal, the teat duct open and the quarter otherwise normal there is always the possibility of exciting the glands to produce more or less milk by massaging or allowing a calf to work at the quarter. If the condition is not corrected during the first lactation there is always the possibility of the quarters being normal again at the next parturition. This is particularly so if the glands be excited sufficient to give even a little milk and, of course, do not suffer a chronic inflammation and induration. Where the teat ducts are congenitally closed, surgical interference is usually disastrous.

Any broad-minded person knows that being kind to animals is being of aid to the general betterment of the community. — Taunton (Mass.) Daily Gazette.

Swine Practice

Edited by A. T. KINSLEY, M.S., D.V.S.

Suggestions for Swine Feeding

DIET for swine, as in other animals, varies with the type of animal and its use. Some milk is the natural diet for the new born pig. It has been found, experimentally, that sows produced from 4 to 7 pounds of milk per day. The average composition of the milk from sows shows that it contains approximately 7 per cent butterfat, 6 percent casein and albumin, 5.7 percent sugar and 1 percent of ash, or total solids of over 19 percent. There is more or less variation in the quantity and quality of sow's milk. Some families of swine are much better milk producers than those of other families. It would be possible by selective breeding to produce sows that would be heavy milkers. The total solids of sow's milk rarely exceeds 13 percent. The fat globules of sow's milk are only one-fourth as large as those of cow's milk. Because of the small size of the fat globule of sow's milk, it is more readily digestible than cow's milk. The difference in digestibility and of the solid content of cow's and sow's milk indicate that unaltered cow's milk should not be substituted for sow's milk, particularly in the feeding of recently farrowed pigs. Many instances are recorded of digestive disturbances and some times the death of pigs fed on cow's milk. Cow's milk when modified by the addition of cream, lactose and lime water is a substitute that is usually satisfactory.

The average weight of pigs when farrowed is from 2 to 3 pounds each. Pigs from mature sows are usually slightly larger than those from gilts. The proper ration for the sow prior to and after farrowing is of prime importance. Breeding sows should be kept in ordinary condition during the period of gestations. Heavy milking sows should be fed sparingly with a ration of ground oats or barley and skim milk for a period of ten days prior to and a like period after farrowing. Poor milking sows should be given a full ration of food stuff that supports the flow of milk.

About 1 percent of the weight of the sow is required in concentrated foods to support her and a litter of pigs during the first ten days after farrowing. It has been estimated that one-third of that quantity is required for the maintenance of the sow and two-thirds for the production of milk.

The preparation of the food for swine has been an important topic for investigation by various experiment stations. Generally speaking, the grinding of coarse grain feed is economical and desirable. The cooking of foods, probably excepting potatoes, is not economical and the cooking process does not render the food stuffs more digestible. The soaking of grain foods is not an advantage and soaking favors fermentation and is, therefore, not desirable.

The method of feeding of swine is of importance in the preparation of hogs for market. The self feeder has proven efficient, economical and therefore desirable wherever it has been used. The self feeder places the pig on the same principle as the cafeteria does the human. The style of self feeder selected will depend entirely upon the desires of the feeder. Mixed feeding is the most economical and therefore a combination feeder in which different feeds can be provided is desirable. Self feeders require some attention, and unless they are closely watched and properly regulated, they should not be installed on any farm. The feeders should be maintained on concrete or plank platforms so that the surroundings can be kept in a sanitary condition.

There are many other items that could probably profitably be discussed regarding feeding of swine. Practitioners will confer a favor upon the Editor by indicating whether such topics should be discussed further in a future issue of VETERINARY MEDICINE.

The Swine Industry

Several conditions have arisen in the last few years that have had a marked influence on the swine industry. Prior to the world war swine and pork products varied in price from a low level in 1908-09 to the high prices that were realized in 1917-1918. The prices in the early part of 1919 were fairly stable, but during the latter part of 1919, the year of 1920 and thus far in 1921, the prices of swine and pork products have been very erratic. According to the Bureau of Crop Estimates of the United States Department of Agriculture, the price of swine decreased 9 percent from March 15 to April 15, 1921, and it is further shown that for the 10 years from 1910 to 1920 the price of pork increased 4.5 percent from the middle of March to the middle of April each year. On April 15, 1921, the price of swine was 37.9 percent lower than on April 15, 1920.

The price variations of other farm commodities have been about the same as those of swine and pork products. The erratic and low price levels of swine during the last two years has been attributed to various causes which the author will not attempt to discuss.

Abortion and sterility in sows has been rather prevalent in the corn belt of the United States for the last two years and has been a discouraging factor to swine breeders.

Inadequate Quarters Promote Losses in Pork Production.

The attempt to rapidly increase production of swine to meet the requirements of supply of pork products during the war was patriotically executed by the majority of breeders; however, in many instances it was not possible for the producer to provide proper equipment and the increased production in inadequate quarters resulted in increased losses of little pigs which was due to bacterial infections and animal parasitism. The various microbian agencies still persist on many of the farm premises and losses of pigs have occurred, although the production has been reduced to approximately the pre-war basis. The losses of little pigs have caused considerable concern, and unless such losses are prevented will be a factor in diminishing the supply of swine and pork products.

Hog cholera has been effectually controlled during the past several years; however, the low prices may have a tendency to decrease the vigilance on the part of the breeder in having his swine immunized before there are local outbreaks, if not properly controlled, will result in extensive outbreaks and serious losses.

Various Factors May Discourage Swine Breeders and Feeders.

The various foregoing factors—low prices, abortion and sterility, excessive losses of little pigs—have had a tendency to discourage the swine breeder and feeder, and unless these factors are counteracted, at least some and possibly many breeders and feeders will discontinue their activities in the swine industry. According to the Bureau of Crop Estimates there were 71,727,000 swine on farms and ranges Jan. 1, 1920, and 66,649,000 on Jan. 1, 1921. This in part was due to the extensive marketing in the fall of 1919, but also indicates a diminished production In a statitstical report, the monthly Crop Reporter of April, 1921, indicates that there were 22 percent less breeding sows on farms on April 1, 1921, than on April 1, 1920 According to a more recent report from the Bureau of Crop Estimates, it is stated that the number of swine increased 1.6 percent from Jan. 1 to April 1, 1921. This temporary increase may be due to the holding of marketable swine because of the low prices.

Veterinarian Important Factor as Guardian of Live Stock Industry.

The veterinarian is the guardian of the live stock industry and should be an important factor in preventing losses and encouraging the swine breeders to maintain normal production. Many veterinarians have found that there is not as much demand for their services as there was during the high-price period. They may also find that it will be necessary for them to adjust their prices for service to correspond to the diminished value of farm animals. In many instances breeders and farmers will not have the funds available to pay for veterinary service as promptly as they did previously, a condition that should be properly arranged for by the veterinarian. Some veterinarians are finding that they have some time now that could be devoted to other duties. They are the most logical men in

their community to advise on the problems of breeds and breeding, feeds and feeding, as well as sanitation and preventive medicine. A general campaign is now under way on increasing the number of pure-bred sires and is worthy of the efforts of all veterinarians. According to the information available only 10.89 percent of the farms of Indiana and only 5.72 percent of Ohio farms have pure-bred swine. Although we have no definite statistics, from the information available, it is apparent that less than 2 percent of swine in the United States are registered pure-bred. Foreign markets purchase breeding swine and other animals in those countries in which there are large numbers of herds of pure-bred animals from which they can make their selections. The sale of breeding stock into foreign countries is desirable because of the increased business and the advertising. To obtain and retain foreign business there must be an increase in the percentage and number of pure-bred swine and the veterinarian is in a position to encourage pure-bred breeding stock on a constantly increasing percentage of farms in his community.

Veterinarians Should Give Advice on Feeds and Feeding.

General advice on feeds and feeding is always appreciated by the swine owner and in many instances swine that would be fed at a loss can be made profitable to the feeder by some changes in feeds or the methods of feeding. The veterinarian can in many instances suggest changes of the methods or feeds that will be of untold value to the feeder. The veterinarian should receive proper compensation for advice on feeding problems and the feeder will gladly pay for such services.

Abortion and sterility, unless properly controlled, are going to be a serious menace to the swine industry. Abortion may be the result of disease (infection) of the genital organs, unsuitable feed, or injury. A careful examination should be made of sows that have aborted in order that the condition should be correctly diagnosed. Treatment will be of little or no value unless the cause and nature of the condition is known. In some cases the entire difficulty will be found to be due to a sterile boar. Sterile or non-breeding boars are much more common than is usually suspected and some cases have been investigated in which the boar was sterile, although it was suspected that the sows were responsible for non-production. In many instances the system of feeding or the character of feed has been found to be responsible for the lack of sexual-vigor. The problems involved in abortion and sterility should be carefully studied and mastered by the veterinarian, for it is very probable that these conditions will increase as breeding becomes more intensive. The losses of little pigs will be most successfully curtailed and controlled by inauguration of the proper sanitary measures on the farms. The individual farrowing house, rotation of pens and the provision for pasture are the most important measures and will diminish the losses materially.

The possibility of extensive outbreaks of hog cholera must not be overlooked and will be prevented only by the judicious use of serum and virus combined with proper sanitary regulations.

The swine breeders and feeders have many difficulties confronting them. Veterinarians are in a position to assist the swine owner, and if the proper amount of energy is exerted in the right direction the swine industry will again become profitable not only to the producer, but will be of untold value to the consumers of meats and meat food products.

WRINKLES MAR APPEARANCE OF PRIZE-WINNING BOAR.

A few days ago I was called to "do something" for a valuable boar, which had developed wrinkles at very conspicuous parts of his body. The boar was being fitted for the ring this fall, receiving as part of the ration, a daily walk of three-fourths of a mile, and back again.

He is in fair flesh, active and doing real well as far as we know. The owner is of the opinion that he was given too much exercise, causing the unequal shrink. I, for lack of better knowledge, let him have it that way.

The wrinkles are quite deep, several on each side, running vertically. I injected rectified oil of turpentine in the same manner as for the treatment of muscular atrophy.

As this boar is a prize winner, your advice as to the treatment will be appreciated. What is the cause of these wrinkles?—S. K., Illinois.

REPLY—You did not state just where the wrinkles developed No doubt, you are fa-

miliar with the heavy wrinkles or so-called shields that develop on the shoulders of boars and appear to be a vestige of a prehistoric characteristic of swine that probably served for protection while in combat. If the so-called wrinkles you have mentioned are of the nature of shields, there is little that can be done to overcome them. They may be softened by the frequent applications of a bland oil, such as cottonseed oil, using a little friction in order to rub the oil in thoroughly. The injection of counter irritants beneath the wrinkles will probably intensify the objectionable condition rather than cause a filling out and obliteration of the wrinkles.

You state that the owner thinks the wrinkles are caused by excessive exercise. There is some question whether or not exercise would have produced the wrinkles. We would rather be of the opinion that they are due to an inherited tendency, and aside from the application of the bland oil we have not found any means that will overcome or remove them.

POSSIBLY A CASE OF INTESTINAL PARASITISM.

I was called several days ago to see a purebred Hampshire boar pig about four months old, which has had the very best attention all along. He has been fed on shorts, corn and tankage and has access to good pastures.

There are six pigs in the litter and all appeared normal until after weaning. When the pigs were about two months old, the mother was bitten on the udder by a rattle snake. The pigs were taken away from her in about twelve hours after she was bitten and were never allowed to nurse any more.

In a few days, one of the pigs began to show nervous symptoms, trembling and muscular incoordination on movement and is gradually growing worse. This pig appears to be in perfect health otherwise. It eats heartily and is growing fast.

I would like very much to receive a diagnosis and also suggestions as to treatment.—C. H., Arkansas.

REPLY—From your description it is not possible to make a positive diagnosis The symptoms you have given may be the result of intestinal parasites, and I suggest that santonin capsules be given to these pigs, after being properly dieted; also, that you have their feed carefully regulated, seeing to it that they receive a good ration and, if possible, one containing tankage and mineral elements.

The feeding of milk, whole milk or skimmed milk, or any of the mill products will also be of value in these cases.

A CASE OF MILK FEVER.

I was called to see a Jersey cow in good flesh, weight about 850 pounds.

As usual, the owner informed me that on the previous day this cow had gained access to the bran box and had eaten four or five gallons of the contents of the box, which was very rich with shorts.

The cow was down and showed every symptom of milk fever. I inquired as to the age of her calf; it was six months old. The cow had not been bred since calving.

I was somewhat puzzled and gave the cow a thorough physical examination, but could not find anything wrong except milk fever. I gave the cow the air treatment and left her, telling the owner to call me in three or four hours and let me know how she was getting along. He did so, and informed me that the cow was up, wanting to eat and had drunk some water. She made a rapid recovery without any gastric disturbances.

I would like to ask if the overfeed caused the trouble, or if any practitioner has had a similar case. I have been practicing twenty-one years and in my experience never saw a case like this before.—C. E. C., Tennessee.

REPLY—Cases that appear to be milk fever, at times remote from the parturient period are by no means uncommon in cattle. Some veterinarians call these attacks milk fever, some call them botulism, some call them forage poisoning. All use the air treatment with success.

No one is able to explain these cases. For that matter, no one can explain what causes milk fever. These unusual cases can be accounted for on the supposition that the unknown factor, whatever it is, that occasions the ordinary case of milk fever, occasionally operates at times remote from the calving period.

Many cases such as this have been reported in the Journal, in past years. A sudden change in the feed or a sudden large increase in the ration sometimes accompanies the attack, or seems to be a predisposing factor but more often there is nothing in the history of the case that would incriminate the feed.—C.

Live Stock Poisoning

Edited by L. H. PAMMEL, Ph. D.

Professor of Botany, Iowa State College, Ames, Ia.

Poisonous Properties of the Whorled Milkweed

Dr. C. Dwight Marsh and A. B. Clawson have published the results of their investigation of the poisoning of the whorled milkweed (Asclepias pumila) and A. verticillata var Geyeri.

Bull. U. S. Dept. Agrl. 942: 1-14, 2 f. p. 1-3, 1921.

The A. pumila is a western plant, ranging from eastern Montana to eastern New Mexico, east of the main Rocky Mountain Range, extending eastward from North Dakota to South Dakota, to the Panhandle of Texas.

Mr. Eggleston, with whom the writer had a pleasant visit about a year ago, furnished the following description of A. verticillata var Geyeri, the plant referred to in the article by Marsh and Clawson.

"A verticillata, the whorled milkweed of the eastern part of the United States, is distributed throughout the Atlantic Plains and the Mississippi Valley. It differs materially from A. galioides, A. pamila and A. mexicana in that it has long, fibrous roots and smooth pods.

"A. verticillata var. geyeri can be distinguished from the typical form by its numerous adventitious buds on the fibrous roots. These slender, fibrous budded roots are often long and horizontal and thus simulate the single strong horizontal roots of A. galioides A. pumila, and A. mexicana.

"The material used in these experiments was collected at Missouri Valley, Iowa, on June 20, 1919.

"Thirteen feedings of this plant were made to sheep by the balling gun, resulting in two animals becoming sick and one other very sick. Three feedings with hay were made to a horse, with no harmful result.

"Of the three sheep poisoned by Asclepias verticillata var geyeri, two, sheep 482 and sheep 523 were sick, and one, sheep 473, was very sick. Both sheep 482 and sheep 523 staggered and showed general weakness, which in the case of sheep 482, was more pronounced in the hind legs. In this animal the respiration was labored and in sheep 523 a weak pulse was noted.

"In the case of sheep 473 all the typical symptoms of Asclepias galioides were noted, including weakness, especially marked in the hind legs, staggering, weak and rapid pulse, labored respiration (the expirations accompanies with groans), dilated pupils, elevated temperature, bloating, spasms with opisthotonos, and running movements. Spasmodic movements of the mandibles in a chewing movement were very noticeable."

This plant comes within the range of a part of the United States where the livestock industry is very important.

Mr. Eggleston's description of the western species is as follows:

"Asclepias pumila may be called low whorled milk milkweed, or Great Plains whorled milkweed. The stems, which are often branching are 3 to 12 inches high, tufted and puberulent. The main root is horizontal, branching, and produces adventitious buds.

"The leaves, which are 1 to 2 inches long, are sessile numerous, crowded and irregularly alternate to verticillate, linear-foliform, revolute, and scabrous-puberulent. The flowers are in terminal branching umbels, few to many flowered, with short peduncles, and are scabrous-puberulent. The greenish-white corolla has oblong lobes and white oblong hoods, which are hastate-sagittate in back view and shorter than the horn. The follicles are erece, puberulent and 1½ to 3 inches long. The plant is found in adobe draws in dry plains and in foothills from southeastern Montana and southeastern North Dakota to the Texas Panhandle and central New Mexico. It is most abundant on the plains of Colorado.

"Although it has a root system and seeds similar to Asclepias gladioides, it has not spread widely. It usually is scattered in small patches in draws.

"The symptoms of poisoning were a weakness of the hind quarters of the animals, which resulted in a staggering gait. There was in most of the cases depression and in some evident trembling, but the staggering was universally present and was particularly noticeable. This was not due in most cases to extreme weakness for the animals could get about quite readily, but appeared in a gait which reminded one very much of a drunken man. This symptom of staggering was one which in some cases continued for several days. The pulse generally was weak and rapid, and the animals which were quite sick frequently accompanied the expirations with a grunt or a groan. In the cases which recovered there was no bloating, salivation or spasm. It was quite noticeable in many of the cases that the animals when standing held the head high and the nose extended forward in a very charac-

teristic fashion. In the animals which were fatally poisoned, in addition to the symptoms already described, there was some bloating and salivation and they exhibited violent spasms, accompanied with running movements. The temperature in the two fatal cases, sheep 519 and 547, ran for a period very high, reaching a maximum of 107° F. in sheep 519, and 109.6° F. in sheep 547. In the spasms the latter animal threw itself at times in the opisthotonic position, and occasionally drew its head toward the thorax with a spasmodic motion.

"In comparing these symptoms with those shown by Asclepias galioides there is nearly a complete resemblance. The symptoms exhibited in the fatal case of one could not be distinguished from those seen in the other. In the cases of intoxication with recovery, no spasms appeared, and in this respect A. pumila differs from A. galioides. This, however, may be explained by the fact that A. pumila is much less toxic than A. galioides, and it may be supposed that in the cases of intoxication there was not enough of the poisonous principle to produce the spasmodic stage."

SOW THISTLE

Dr. H. A. Jasme of Savannah, Georgia, sends a specimen of sow thistle (Sonchus oleraceus) with the following letter:

"I was called to attend a cow today that had eaten this plant for the last several days. The history was that the animal appeared sluggish yesterday, refused to eat last night and was down this morning when I was called. The pulse and respiration were normal, the bowels loose and the animal unable to rise. No other symptoms. The last calf eight months. Her regular feed examined and found all right. Would appreciate some information on this weed, as we have lots of it here, and I can not recognize it. Enclosed envelope for your convenience."

All the species of sow thistle (Sonchus) have a milky juice. These plants are related to lettuce and dandelion. A medical preparation is made from lettuce known as Lactucarium. This does not, however, have any strong properties. It is used as an opiate. I do not think the symptoms described above by Dr. Jasme are caused by this sow thistle.

I am always glad to get material of any suspected cases of poisoning.

YOUNG COCKLEBURS AND FROZEN ALFALFA SUPPOSED TO BE POISONOUS

Dr. A. F. Reichmann of Armour, South Dakota, writes as follows:

"I would like to have your opinion in regard to hogs getting poisoned on young cockleburs and young frozen alfalfa. In two herds of hogs 30 died in one night and the owner thought it was due to eating young cockleburs. In the other herd 35 died in 24 hours supposedly due to eating young alfalfa that had been nipped by a recent frost. Any information you can give will be greatly appreciated."

There are a good many cases on record of young pigs being poisoned by young cockleburs. I hardly think frozen alfalfa would cause the poisoning you mention. In my Manual of Poisonous Plants I make this statement in regard to poisoning from cocklebur:

"The injury from this plant probably comes largely from its mechanical action. As the involucre is indigestible, its barbs sometimes injure an animal feeding upon it. Stock will probably not eat very much of it, but on account of the hooked awns of the involucre the animal may have considerable difficulty in removing them. The hairs of the plant cause itching. Several cases of poisoning in hogs, probably due to this plant, have been reported to me. The plant contains the poisonous glucoside xanthostrumarin which resembles datiscin. On heating, the odor of succinic acid is given off. According to Chestnut, the young seedlings of three species of cocklebur, among them our Canadian cocklebur (Xanthium canadensis) are poisonous to hogs. Dr. Bitting was unable to find a poisonous substance in the growing plants. He thinks the injurious properties are largely mechanical."

PLANTS SUSPECTED OF BEING POISONOUS

Dr. E. Griesinger of Wilbur, Washington, sends several different specimens with the following letter:

"I have had two horses under treatment, and one has since died. Symptoms—temperature 100° F., pulse 50, weak but steady, breathing normal, slight watery discharge from both nostrils, mixed with a little blood, membranes of nose and eye slightly inflamed, mouth a little pale and yellowish, appetite fair, body drawn up, rather lay down and rest, acts sleepy, but it is not, does not care to walk. Nothing else shows. Autopsy was not held on the first case. The pasture from which these samples were taken is quite bare except for a little brush and wild mustard."

One of the plants is lupine, which when ripe should no doubt be classed with poisonous plants. One of the other specimens is erigeron, related to the silver plant. This plant, so far as we know, is not poisonous, although it has been suspected on several different occasions. The other plant is a member of the sunflower family, and I do not know that it is poisonous, at least it has never been regarded as such.

A natural kindness of disposition is so great a virtue that one without it is to be pitied. Humane treatment of animals begets qualities of self-respect and friendliness that are well worth cultivating.—Boston Post.

Laboratory Diagnosis

Edited by C. A. ZELL, D. V. M.

DIRECTIONS FOR PACKING SPECIMENS FOR LABORATORY EXAMINATION

1. Gross anatomical lesions, where a bacteriological examination is desired, are best sent carefully wrapped in a cloth wet in a 2 to 10 per cent solution of farmalin, and properly boxed. For small specimens use the weaker solution. For large specimens, the stronger solution.
2. Chickens and other fowl should have the feathers removed, be wrapped in a cloth saturated with 10 percent formalin solution and sent to the laboratory whole and unopened.
3. Specimens of tumors or other tissue, not for bacteriological examination, may be sent in a 4 per-cent formalin solution.
4. Specimens of blood, pus and body fluids for bacteriological examination or for serum tests should be drawn aseptically and sent in sterile containers (small bottles boiled and cooled), airtight. Such specimens should reach the laboratory quickly. If sent by parcel post they should be sent special delivery. It is best to send blood, pus and body fluids by first class mail, special delivery. If the quantity of pus is small, dilute it with sterile normal salt solution to prevent drying. Sterile containers will be supplied on request.

Quantitative chemical analyses cannot be furnished free of charge owing to the large amount of work often involved, but tests for the presence of the more common poisons will be made without charge.

Where an immediate reply either by wire or letter is requested, a nominal charge will be made. In such cases, the inquirer will be billed direct by the laboratory.

In all cases where laboratory examination is requested the history and symptoms of the case as fully as they may be obtained, and a description of the post-mortem findings if an autopsy has been made must accompany the request, the object being not only to enable the laboratory technician to render the greatest service possible, but also to make the report of value to readers who have not seen the case.

Send all correspondence and specimens to Veterinary Medicine, 53 W. Jackson Blvd., Chicago, Ill.

DIAGNOSIS OF RABIES NOT SUPPORTED LABORATORY FINDINGS.

I am forwarding you under separate cover the brain of a two-year-old heifer, killed by bleeding. She had calved about six weeks ago, and retained her placenta, but was better of its effects, and the vaginal discharge had ceased. She was only known to be ill since yesterday morning—about 36 hours—but as she was in a bunch of forty might have been off a little longer. I was first called about noon yesterday, and she showed symptoms that were puzzling to me. She was weak, and staggery, and was very gaunt, would try to eat and drink, but was unable to accomplish either. The first day she could masticate her hay, but was unable to swallow it, and, although she made efforts to drink was unable to get away with any of the water. On the second day she would hold the hay in her mouth unmasticated. On the first day she could swallow a little grass, but on the second not even that. Saliva drooled from her mouth from the first, probably two to three bucketfulls a day. Temperature, pulse and respiration were slightly increased from the first.

I placed a dental speculum on this animal and made a thorough examination of her teeth and throat but could find nothing deviating from normal. I passed the stomach tube meeting no obstruction, yet she continued unable to swallow. Her mouth was opened enough nearly all the time that the end of her tongue was visible past her incisors. From yesterday morning until this evening she had been changed from an animal in fair condition to one so extremely emaciated she could hardly stand alone.

The only guess I would venture on this animal was rabies, so I am forwarding you the brain to ascertain or not that is the case. I am more inerested because her saliva got in a wound on my hand while examining her mouth. A neighbor's dog was recently taken sick, had difficulty in swallowing, and died, also the dog at this place had been ill, but was better, but it seemed more probable that these animals were poisoned than had rabies.

I was unable to find any pathological lesions in this heifer on autopsy.

Please examine for negri bodies at once, and wire me.—C. F. B., Pennsylvania.

REPLY—No negri-bodies were found in the brain.

The clinical picture that you give inclines me to suspect that your case was one of forage poisoning or botulism.

HEMORRHAGIC SEPTICEMIA STUNTS PIGS.

I am sending you specimens of lung and heart taken from a pig about two months old. I am of the opinion that it is hemorrhagic septicemia, although we have hog cholera in this neighborhood.

The symptoms are as follows:

The respiration is rapid, at times showing thumps, there is coughing, the temperature runs about 105° F. There is some appetite but the animals grow very thin after they have been sick about a week.

Some of the affected pigs die suddenly but the most of them run down and become emaciated before they die. Some have a diarrhea but most of them do not.

Postmortem findings: Redness of the skin under the body. The liver enlarged and containing dark spots. The stomach well filled with ground corn; the intestines nearly empty and were inflamed in small areas. The kidneys showed acute inflammation. The lung show pneumonia.

There are about twenty in this condition now.—L. S. L., Iowa.

REPLY—Bacteriological examination of the specimen showed many very typical bipolar organisms of hemorrhagic septicemia, besides a number of secondary invaders like streptococci and staphylococci and B. coli.

Your diagnosis of hemorrhagic septicemia was correct. We would recommend the use of bacterin treatment without delay, especially the mixed infection bacterins. Since cholera is present in your neighborhood it should be impressed upon the owner that the bacterins offer no protection against that.

SPECIMEN IMPROPERLY PACKED—LABORATORY AID IMPOSSIBLE.

I am sending under separate cover, by special delivery, the carcass of chicken for your diagnosis.

Knowing little or nothing of chicken diseases and having a client who has been losing quite a number, I am, therefore, asking your assistance.

The history is as follows:

The farmer will come out into the chicken yard and find everything all right; that is, everything looking normal. Coming out again within an hour he will find one or two more down and unable to move or get up. Within half an hour the chicken will be dead. They die by "just dropping over" undergoing no struggle.

My client tells me that he has been losing fowl this way for the past three years.—F. R. L., Maryland.

REPLY—This specimen was received in an advanced stage of decomposition and no examination was possible.

Because of the long period during which losses have occurred in this flock and the probability that they will continue, we suggest that you send another specimen, wrapped in a cloth moistened with fomalin solution, according to the directions given at the head of this department.

In the meantime, we suggest that a careful search of the premises be made for putrified flesh. The clinical picture you give is such as may be found where fowls have access to carcasses of animals that are undergoing rapid putrefaction, and is termed by the farmer, limber neck, by others ptomaine poisoning, and by still others, botulism.

The trouble has often been thought due to maggots, since on autopsy many maggots have been found in the crops of fowls dying of this complaint, but the presence of the maggots is probably only incidental and to be expected in fowls that have been eating putrid flesh.

The condition is self perpetuating during hot weather, since affected fowls will die in tall weeds or corn fields or out of the way places, and their carcasses will putrefy and in turn poison others, some of which in turn will die in similar places and poison still others, and so on.

Ordinarily, if a very careful search is made of the entire premises and all decaying flesh removed, the ailment will come to an abrupt end.

LABORATORY CONFIRMATION LACKING BECAUSE OF IMPROPERLY PACKED SPECIMEN.

I am sending you a specimen of placental membrane taken from a cow that aborted in the sixth month of pregnancy. Two years ago this same cow gave birth to a calf that was within one week to coming on time. The calf was weak and died. Last year this cow gave birth to a calf fifteen days before time; the calf died. This year she calved the sixth month of pregnancy. To-night I was called out to the place to see another one that is aborting in the sixth month of pregnancy. Can you make a diagnosis from the material sent to you or do you need a sample of blood?—L. A. T., Iowa.

REPLY—I was somewhat handicapped in bacteriological examination of this specimen since it reached the laboratory in a badly decomposed condition, and cultivation experiments were impossible.

However, there were a number of organisms present that appeared very much like the B.

abortus, and this, together with your history inclines me to think you have to deal with infectious abortion.

If you will send a specimen of blood, or rather blood serum, from this animal and all other members of the herd, for serological test, we shall probably be able to give you more definite information as to whether or not you have to deal with contagious abortion. There seems little doubt, however, that this is what is confronting you.

HEMORRHAGIC SEPTICEMIA KILLS YOUNG CALVES.

Am sending specimen of blood taken from heart and spleen of a six months old calf that was taken sick very suddenly. Two calves in this herd have died under similar circumstances. These calves were fed milk and other feeds. They would be eating and suddenly start running, jump over the fence and then run until they fell and die in spasms. I was called for the second calf but it died as I arrived so have not much in the line of symptoms to give you. All internal organs seemed normal. There seems to be an abnormal amount of spinal fluid around Meniniges of spinal cord. I've never had a case of this kind.—F. A. S., Illinois.

REPLY—Microscopic examination of the slide revealed numerous typical bipolar organisms (B. bovisepticus) of hemorrhagic septicemia. You undoubtedly have to deal with the peracute form of hemorrhagic septicemia.

All exposed animals should receive bacterin treatment without delay.

A WASTE OF TIME TO SEND IMPROPERLY PACKED SPECIMENS.

I am sending a specimen for laboratory diagnosis. This tissue is a portion of a retained placenta from a five-year-old Holstein cow that carried her calf eight months.

You will notice that at each place where the button attaches there is a roughness of the tissue, which in the fresh state feels to me like powdered bone. As I was removing this placenta the buttons had this same feel. And as I continued to work further forward in the uterus the buttons were so rough that I feared that they would scratch my arm and cause an infection.

This is the first experience that I have had with anything of this kind and I would ask that you make a microscopic examination. I thought of tuberculosis but I understand that this animal has been tested several times.—A. L. S., New York.

REPLY—This specimen was received perfectly dry and examination was absolutely impossible. An effort was made to prepare the specimen so that it could be sectioned, but without success.

Specimens sent to this department wrapped in a cloth soaked in weak formalin solution reach the laboratory in good condition. We urge that the directions given at the head of this department for sending specimens be followed.

CARE NECESSARY IN PACKING SPECIMENS.

I am sending you by parcel post two small chickens for postmortem or bacteriological examination.

I posted three of these chickens and could not satisfy myself as to a correct diagnosis, the owner has about a hundred and fifty in the flock, and about two weeks ago ten died in two days. Old and young are afflicted the same way. They rapidly become weak and go down, dying slowly. On postmortem examination I found two of the older hens infested with worms. For this I left a vermifuge that the owner said gave good results. Just as soon as I treated the flock with hemorrhagic septicemia bacterin they stopped dying for two weeks. This morning the owner called me up saying that five had died since yesterday, the same symptoms as before.

I will treat them all with bacterins again this afternoon. Am I right?—R. J. H., Ga.

REPLY—The specimens were received in an advanced stage of decomposition. Pathological and bacteriological examination was therefore out of the question.

The foregoing is used only to call the attention of those sending specimens to the laboratory for the need of more careful packing. At least thirty carcasses of chickens sent to this department during the past month have been so far decomposed as to render examination futile.

Of course, the weather has been hot and in many cases these specimens have been sent long distances. Nevertheless, if the directions given at the head of this department are followed, the specimens will reach the laboratory in good condition. It is a waste of time and transportation charges, to send specimens improperly packed, and disappointment can be the only outcome.

Parasitology

Edited by MAURICE C. HALL, Ph.D., D.V.M.

Examining Feces for Parasites and Parasite Eggs

THE diagnosis of parasitic infestation of the stomach and intestines, and to some extent infestation of the liver, respiratory tract and some other portions of the body, is largely based on miscroscopic, and to a lesser extent on macroscopic, examination of the feces. These diagnoses are, for the most part, quite positive and dependable and are not difficult to make. They call for the use of a microscope, a somewhat expensive piece of apparatus, but the present day veterinary practitioner who is using modern laboratory methods needs a microscope as an essential part of his equipment for a large amount of work other than diagnosing parasitic infestations. Aside from a miscroscope, slides and cover glasses, very little apparatus is necessary for examining feces for evidences of parasitism, though if one has much work of this sort to do, a slight increase in the amount of apparatus and a somewhat more elaborate technic will save time, nervous energy and eyestrain.

It is a common thing for the owners of livestock to find worms passed in the feces of their animals and to bring them to the veterinarian for examination. Specimens of this sort are frequently easy to determine and a diagnosis of a definite sort follows immediately from the identification. Sometimes the specimens brought in for identification are spurious parasites, material of various sorts which is not parasitic, but which deceives the client and may at times deceive the veterinarian. A proper technic for the examination of feces where parasitism is suspected will usually save the veterinarian from error along this line.

It is intended here to outline for the most part only the principles underlying the technic used in examining feces. As a rule everyone develops his own technic, this being largely a matter of personal preferences and local conditions. The same result can doubtless be obtained by any one of numerous variations in technic, and results are what count.

The most simple and direct method of examining feces macroscopically for evidence of parasitism consists in poking about in the manure with a stick or something of the sort for objects resembling worms. It is what the farmer usually does and what the veterinarian not uncommonly does. It must be admitted that occasionally one finds parasites in feces in this manner, but it must also be admitted that this is the least satisfactory method of examining feces. Parasites embedded in feces are easily overlooked and non-parasitic objects smeared with feces are easily mistaken for parasites. It is possible for horse manure to contain hundreds of worms and not one worm to be found by such technic.

To determine whether worms are present in feces, information which may be desired after the administration of an anthelmintic, one should adapt one's technic to the nature of the feces. The physician has a comparatively simple task in examining human feces, since these feces are made up mostly of finely comminuted material and a very small amount of large coarse material. The veterinarian has no such simple task. Dog and cat feces are somewhat comparable to human feces, but they contain more coarse material in many cases. Swine feces usually contain yet larger amounts of coarse material. Sheep and goat feces are commonly in hard pellets which must be broken up to permit of an examination of the comminuted vegetable material composing these pellets. Cow manure is usually soft enough to be easily examined, but its bulk is a disadvantage. Horse manure contains much coarse vegetable material and the manure for one day is bulky enough to require about a day's work to examine carefully and completely for worms.

Wherever it is feasible to screen feces to

examine them for parasites, screening is a great help. The feces of the dog, cat and pig may be broken up in water and screened without difficulty. Sheep and goat feces are much more difficult to handle in this way, though they can be screened to advantage in looking for parasites. Cow manure is easily screened, but its bulk makes the examination of the manure for one day a task. Horse manure is too coarse to screen successfully in the amounts passed in one day and must be examined by being carefully picked apart by hand. Wherever screens may be used, the nature of the screen to be used depends on circumstances. Where few fecal examinations are made and little apparatus is available, a piece of cheesecloth my be stretched over hoops or a bucket top to make a screen. Where fecal examinations are a routine matter, wire screens, such as copper or brass screens, of assorted sizes, from 6 to 100 mesh apertures to the inch, are of value. After the feces have been broken up thoroughly by soaking in water and shaking, they are poured through the screen or screens and each screen then put in a glass dish containing water and examined for parasites. The material on the screen may be rinsed off into this glass dish and examined for worms or other parasites present.

Examination for Parasite Eggs

Where parasite eggs are sought for by microscopic examination, the simplest technic is the so-called smear method. A bit of feces is taken on a match, tooth-pick or stirring rod, rubbed to a uniform smear in a little water on a slide, covered with a cover glass and examined under a microscope. It will afford satisfactory evidence as to the presence of parasite eggs provided there are numerous eggs present in the feces. For detecting gross infestations this method may be entirely satisfactory in some circumstances. It is not a delicate method and can not be depended on to detect light infestations. Its results become increasingly dependable in proportion to the number of slides made and examined from a given fecal sample, but the length of time involved in examining such preparations makes it far more profitable to put some of this time on the technical manipulation of the feces before making the slide to be examined.

The technical manipulation necessary to prepare more satisfactory slides for examining is designed to concentrate the parasite eggs originally scattered throughout the feces by removing that part of the feces which can readily be separated on the basis of differences in size, specific gravity, solubility, etc., in other words on the basis of physical and chemical differences. A simple technic that will give a high degree of concentration is as follows: Feces are broken up, screened through a set of screens placed in a rack with the coarse screens at the top and the finer ones at the bottom, the material passing through all the screens being caught in a suitable tray or dish; after standing a minute or so, the top half of this material is decanted and replaced by clean water; this process is repeated every minute until the soluble coloring matter and floating flocculent matter is poured away and the water stands clear on the sediment at the bottom; the water is then decanted until only a little is left on the sediment and this is shaken up and poured into a centrifuge tube till the tube is full; the tube is then set in a rack until ready to be examined. In the course of this manipulation, all fecal matter too coarse to pass through a screen of 100 apertures to the inch, which will allow the passage of the largest parasite eggs one need consider in work of this sort, has been eliminated by the screens; the soluble coloring matter and floating flocculent material which would obscure the view of the eggs on the slide have been eliminated by washing and sedimenting; what is left consists of parasite eggs and other material of approximately the same size, as the eggs or smaller, and material approximately as heavy or heavier. When there is a bottom sediment evidently composed of sand in the tray or dish used to catch the feces passing through the screen, this should be allowed to stay in the dish and not rinsed into the test tube as the eggs are lighter and will be on top of such a sediment. The technic given in this paragraph causes a high degree of concentration of parasite eggs and is applicable to feces from a wide range of host animals, from canary birds to elephants. There are many published methods for examining feces for parasite eggs, but most of them are intended only for human feces, which is a very special case and some of them only for hookworm eggs, which again is a very special case. They are more or less elaborate, though sometimes very useful within the range of their applicability. For the purposes of the veterinarian the simpler technic given here and intended for feces of any sort and the detection of parasite eggs of any sort is recommended.

In examining feces under the microscope for parasite eggs, one must use care not to mistake plant spores, plant hairs, etc., for eggs and worms. To this end it is necessary to consult the available text and reference books in regard to the eggs of the various parasites of the host animal up for examination. Unfortunately, the existing books do not lay much emphasis on egg sizes and shapes in all instances and it is sometimes difficult to get the desired information. The courses in parasitology in our veterinary colleges should contain enough work in fecal examination to make students reasonably familiar with the technic and the interpretation of the slides prepared, so that eggs found will at least be recognizable in a general way to students and to practitioners thus properly trained.

Failure to find eggs in feces with any technic whatsoever is not conclusive proof that no worms are present. In very light infestations the few eggs present in feces may not occur in the preparations examined; where only male nematodes are present there will be no eggs in the feces; where only larvae or young worms are present there will be no eggs; and egg production may be interrupted or terminated by old age, anthelmintics or accident.

ANTHELMINTICS NOT TO BE GIVEN WITH FEED

Is the oil of chenopodium or other vermicides efficacious as an anthelmintic treatment when given in the feed, and what should be the dose?—G. A. H., Iowa.

REPLY—The administration of anthelmintics in feed appears to be absolutely contradicted in the case of most anthelmintics. It is a general principle, based on experimental tests and the clinical experience of centuries, that fasting is essential to the satisfactory action of most anthelmintics.

Food in the stomach and intestines dilutes an anthelmintic and probably coats the worms present, thereby affording mechanical protection from the anthelmintic. Occasionally chenopodium will remove some or all of the worms present in swine when administered in a small amount of feed, but experiments show that the action of the drug is uncertain under these conditions and that whereas it will remove all of the ascarids present from almost all swine treated when given in suitable doses to fasting animals, it may fail to remove any from animals not fasted. A similar diminution in efficacy is noted in the case of santonin when administered in feed.

The administration of anthelmintics to swine in the feed can not be recommended, as it involves a waste of drugs and a failure to give satisfactory results. Capsules can not be administered to swine with safety owing to the danger of placing the capsule in the retropharyngeal recess, an accident which is commonly followed by the death of animals so treated. It is therefore advisable to give chenopodium in castor oil to remove worms from swine.

The therapeutic dose, as determined by experiment is one dram of oil of chenopodium in 1 to 2 ounces of castor oil for animals weighing 100 pounds, and proportionate doses to larger or smaller animals. The dose of castor oil may be cut to one ounce for small pigs and increased to four ounces for large hogs.

The dose may be easily and safely given by the use of a tablespoon, the oil mixture being allowed to flow over the tongue while the mouth is held open by two wire or rope loops or by a speculum. Swine are awkward animals to handle and the noise they make when being dosed is annoying, but individual doses proportioned to the size of the animals and properly administered to fasting animals are essential if satisfactory results are desired.

DOSE OF OIL CHENOPODIUM

What is the dose for horses and swine of wormseed oil or Baltimore oil?—O. W. J., Iowa.

REPLY—The dose of oil of chenopodium or wormseed for the horse is from 4 to 5 drams, given in capsule and followed immediately by a quart of linseed-oil, or castor oil and linseed oil in equal parts, or, according to Wright, by an aloes ball. The dose for a 100-pound pig is 1 dram, or approximately one minim to two pounds of live weight, administered in from two to four ounces of castor oil. Swine should be fasted for twenty-four hours and horses for thirty-six hours before administering the drug.

For Verminous Bronchitis of Calves and Lambs.

℞
Ol. Terebinthinae ..... ʒi-ii
Acid, Carbol.
Glycerini.

For Mange or Ringworm.

℞
Balsami peruviani ..... ʒi
Unguenti sulphuris ..... ʒi
M.
S. Apply externally 3 times daily.

Queries and Answers

Edited by E. L. QUITMAN, D. V. S.

SUDDEN ATTACKS OF BLINDNESS.

I was recently called to see a condition in a stable of four horses that I have been unable to diagnose and would be very glad to receive some light on the cases if possible.

The owner is a quack horse doctor and had been treating two of these horses for distemper, which I believe did not exist. One of the treated ones was the first to be affected, and he supposed it to be due to the distemper and thought nothing about it until the two untreated horses which had not shown any sickness suddenly became affected.

All are mares. Ages 22, 13 and 15 years, respectively. They are in extra good flesh. The respiration, pulse, temperature and peristalsis all are normal. The first symptom shown was the horse became suddenly blind, yet the eyes remained clear and bright. Next the horse stretches the head forward and backward and shows symptoms of pain by moaning. Then a trembling of the muscles of the left blank after which they kick violently with the left hind foot. These symptoms usually lasted an hour or two, after which they remained blind and very excitable.

The first mare noticed was already blind and the owner never suspected anything serious, as the symptoms soon passed. The second mare was the one he had been treating for distemper and he supposed the blindness due to distemper, and when the third mare became affected, he became alarmed and called me.

These horses had been fed hay all winter until about two months ago, when he fed straw for two or three weeks and then changed back to hay.

I suspected some mould or fungus or smut on the feed, but on examination I found the hay to be extra clean, grown on gravely soil and the oats had been run through a mill. The straw I didn't get to see, but the owner said it was free from rust.

I told him I didn't know what the condition might be called, but that I suspected a pressure on the optic nerve from some cause, and that I thought it might be due to their feed, and knowing nothing else to give, I gave about forty-five grains of sodium cacodylate, and today I find the sight is slowly returning and recovery seems possible.—P. E. F., Michigan.

REPLY—Your cases are somewhat peculiar and not a little puzzling. The blindness, technically known as amaurosis, described by you may be due to a number of different causes, such as blows on the head, falls and hemorrhage into the brain affecting the optic commissure.

The blindness and nervousness described by you might occur also as a result of cervical meningitis or a cerebral meningitis, which in turn would be due to some infection and could occur as a sequale of distemper, though you say that in your opinion the four animals mentioned had not been affected with distemper at that time.

Did they receive any cotton seed meal in their diet? Cotton seed meal will in time, if fed in sufficient quantities cause blindness and frequently with the nervous phenomena described by you.

You are correct in your conjecture that the blindness may be caused by some contamination of food. Food which looks to the naked eye to be perfectly pure and wholesome may be dangerously infected with the bacillus botulinus. Blindness and nervousness such as you describe, sometimes occurs in botulism. One of the severest outbreaks of botulism, of which I am aware, occurred among some horses that were fed on a most wholesome looking oat straw.

A treatment that is highly satisfactory in overcoming amaurosis, is iodid of potassium administered in not less than two dram doses three times daily.

WHEN IS MILK FEVER NOT MILK FEVER?

I have had two cases, within a week, which were very unusual to me. They were two Holstein cows, on different farms; both of which had calves about six months ago. Both cows were bred about five months ago. They were only fair milking cows, giving about thirty pounds of milk a day.

Both cows stopped eating in the evening, and on the following day I was called. They had all the symptoms of milk fever; lay flat on the side, no reflexes, exactly the same as the ordinary milk fever cow. Both were given the regular milk fever treatment and responded nicely, in less than one hour.

Now then, why did these two cows get milk fever? Neither was fed heavily; no ensilage or grass, no change or increase in the feed at the time they took sick. I have had similar cases, but never were the symptoms so pronounced as in these two cases.

I remember a case last spring that occurred about six weeks after the cow had dropped her calf, but she was put out on grass, and that in my mind was a good cause, i. e., her feed was increased and in addition, all the grass she could eat.

I treat a large number of milk fever cases every year, but these two cases were out of the ordinary for me.—H. C. M., Pennsylvania.

REPLY—Attacks of milk fever, or at least a condition apparently identical to it and yielding to the same treatment is reported to us very frequently as occurring at times remote from the parturient period. Like yourself, we are at a loss to account for such attacks; but, for that matter we are unable to account for the ordinary attacks of parturient paresis. Possibly the same factor that acts ordinarily at the parturient period, acts in the same way occasionally at other times.

HYPODERMA SILENUS (BOVIS) IN HORSES.

I have recently had a number of cases of "warbles" among horses, the first I have seen. I was rather surprised when one or two owners of horses told me they had got a "woolf" out of the center of a large edematous, subcutaneous swelling in the region of the withers or loins, but I verified the assertion today and secured one myself out of a yearling filly who had a number of them. Can you give me a little light on the subject, as regards prophylactic treatment and how do they get them.—R. V., Virginia.

REPLY—Horses are occasionally affected with the hypoderma bovis or bovine warble.

As to prophylactic treatment, the essential is to keep the animal away from the warble fly. This being well nigh impossible, the next best thing is to smear them, especially on the backs, with oil of cade, which is best, but rather expensive for herd use. The next best is crude mineral oil.

Referring to your question as to infestation. The warble fly deposits its eggs on the skin, which in due time hatch, and the larvae commonly known as grubs, burrow into and beneath the skin and partly by virtue of its own irritating faculty and partly due to a carrying in of pus organisms with it, it frequently gives rise to abscesses.

The complete life circle of the hypoderma silenus or hypoderma bovis is too long to give in the space at our disposal, but you may find it in any good work on parasites or in Hutyra & Marek.

These grubs are removed by a methodical massage and squeezing at the base of the tumorlike formation that they cause. Some practitioners claim good results from the application of chloroform, ether, benzine or gasoline to the surface.

A CASE OF MYOSITIS RESEMBLES TETANUS.

I was called to a case yesterday that puzzles me. A client has a four-year-old mare mule that is stiff all over. The only history that I could get was that two weeks ago she had a bad fall in a mine, but was able to get up alone and showed no ill effects from the fall. Two days ago, the owner states that she seemed sore all over when he was working her.

Her appetite was good, but she has difficulty in opening her mouth and her throat seems sore. Gait is stiff and the muscles over her whole body feel hard and inflexible. She can get her head to the ground only with difficulty. She cannot swing it to either side.

The bowels acted freely while I was there and her urine is white and frothy when voided. I could not give any definite diagnosis as it was a new one to me. She has been working hard of late and is fed corn on the cob and alfalfa hay.—H. C. G., Oklahoma.

REPLY—It is our opinion that the mule was suffering from one of two conditions, either tetanus or myositis.

You failed to mention the presence or absence of the one symptom that would have aided us in differentiating between the two; making possible a positive diagnosis, and that is you say nothing regarding the membrana nictitans. Was it visible and prominent, or easily rendered so by elevation of the head as

would occur in tetanus, or was its behavior normal as it would be in myositis?

PERSISTENT DIARRHEA IN FOALS.

I would greatly appreciate therapeutic procedure for the following cases:

Subjects—Foals, four in number. Age, about four months. Breed, purebred Percherons and Belgians. Sex, two stallions and two mares.

History—Normal parturition, the foals developed leakage of the navel, which was relieved by the owner. Six colts were foaled at about the same time, the four that developed the navel trouble developed an obstinate diarrhea, the remaining two were not affected. The fecal discharge has been watery and evacuated without pain. All the colts have done fairly well and all are in good spirits and flesh.

The sanitary surroundings on the premises are good, the stalls are large roomy light boxes, and are always clean and well bedded. The water tank was emptied and scraped and lime added to the fresh supply of water. The mares have been turned to pasture and kept on dry feed. I prescribed intestinal antiseptics and astringents, but none of the measures have benefited any, nor did a competitor of wide experience fare any better. The mares have not scoured nor have they been worked to any great extent.

Any help with these cases would be greatly appreciated; if I have not given sufficient information I will gladly add to it if you will suggest further data by questions.—J. B. B., Iowa.

REPLY—For persistent diarrhea in foals, we would suggest the following treatment:

First, give each foal six to eight ounces of castor oil, and a copious enema of normal salt solution. Make this solution as hot as it can be borne by the animal for the purpose of relieving the congestion in the posterior bowels, and inject as far up as possible, using a soft rubber horse catheter attached to the hose of an ordinary injection pump. Also thoroughly wash with soap and water the mare's udder and adjacent area of skin.

Do not allow the foals to suck for about twelve hours after administering the oil, and then give them only light feeds at first; that is, milk the mares well before the colts are allowed to suck. If the irritating or infective material that has no doubt set up a mild mucoenteritis be removed, and the digestive system be given just a little rest, your cases should recover without further trouble.

It is useless to give intestinal antiseptics without first thoroughly cleaning out the intestinal tract, and intestinal astringents are often ineffective except under the same conditions.

Should the foregoing suggestions fail to bring about a cure, put the colts on the following prescription:

R

Phenylis salicyl	℥j
Bismuthi subnit.	℥jj
Ac. tannici	℥jss
Cretae praep.	℥iv

M. et. div. in pulv. No. XVI.

Sig. Give one powder every three or four hours

PARIS GREEN POISONING DOUBTFUL.

I am mixed up in a bad case which I will relate to you and ask for your advice.

Last fall two cows were taken sick and died within a short time. The owner of the cows called in a quack who said the cows had died from Paris green poisoning. They had been running in a field where there were some empty Paris green cans. Also a little on the grass. However, this Paris green had been exposed to the weather all summer.

Now the owner of the cows is suing the man who owned the potato field and I am employed by the defendant.

The cows have been buried all winter and all we have left is the quack's word and the cattle in the ground. Would it be advisable to dig up the cows and have the contents of the stomach examined, or will that be of any use?

Please advise me as to what symptoms a cow will show with Paris green poisoning and how much it takes to kill a cow. Also any other advice as to how to go about this case. It will also aid me in getting rid of this quack.—E. F. M., Michigan.

REPLY—Paris green, also known as Schweinfurt's green, chemically, is an impure acetoarsenite of copper. Exposure to the air does not affect it. Its toxic symptoms and antidotal treatment is the same as for arsensic.

Space does not permit a discussion in these pages of the symptoms of Paris green or arsenic poisoning. You may find it in a most complete form, including the toxic doses, symptomatology, etc., in Lander's Veterinary Toxicology.

If the stomachs of the cattle have not entirely disintegrated, a chemical analysis of their contents would prove of value even at

this late date, and even if the organs themselves have disintegrated, if the contents have remained more or less intact, such an analysis would still be of value.

The toxic dose of this poison varies from one dram to 700 grains, according to the contents of the rumen, method of ingestion, etc. It is unlikely, if there was as little Paris green on the grass as you seem to think, that this caused the animal's death; at least, as quickly as you mentioned in your letter. Have you any hemorrhagic septicemia in your locality?

APPLICATION FOR EXUBERANT GRANULATIONS.

Will you kindly give me formula for the treatment of exuberant granulations?—H. L. E., Texas.

REPLY—We believe the following prescription for exuberant granulations will serve you well:

℞

Alum. exsic.
Cupri sulph. pulv.
Camphorae pulv.
Hydrarg. chlor. mitis
Zinci oxide pulv.....āā ʒ iij
Sig. Apply three times daily.

Bear in mind that the wound should be moistened before applying the powder.

TREATMENT OF THE INFECTED UTERUS.

A little article on irrigating an infected uterus in a recent issue of VETERINARY MEDICINE prompts me to write.

Last week I lost a valuable registered Percheron mare and a high-grade shorthorn cow, both from infection of the uterus. The aforementioned article warned of the danger of irrigating a uterus in this condition. That was the line of treatment I followed, together with uterine capsules and stimulative internal medication. I have had the same thing happen several times before, and I for one will never practice it again, because I am convinced it is fundamentally wrong in theory.

I used a normal saline solution for irrigating and an ordinary injection pump and hose.

Last evening, I was called to see a well-bred Percheron mare in the same condition. Because of the warning in the article and the fatal results I had had, I had made up my mind to change my treatment. This mare shows some sign of parturient laminitis. Temperature 103° F., pulse 50 and weak, respiration quickened and labored, tucked up flank and but little appetite. This animal looks just the same as the one did that died last week, and I believe is destined for the rendering plant unless my present treatment is better than the previous one. Last night, this mare's uterus was full of putrid material which needs no description to anyone who has seen it. I drained it off with the hose, but did not pump anything into it.

This morning she was in about the same condition as last night. The uterus was full again of the same putrid material. I again drew it off and wiped it as dry as possible with absorbent cotton. Then I saturated a piece of cotton with Flavisol, the Zell-Straub preparation, and wiped the walls of the uterus with this, and then squeezed the cotton out in the uterus, using about four ounces in this way. I also injected 45 grains of sodium cacodylate subcutaneously. The directions on Flavisol say the intravenous dose for a horse is 100 to 150 cc. I had never used it in this way, so that I would not give so much. However, I did give 50 cc. intravenously.

For internal medication, I left nux vomica and gentian to be given every three hours, and also a 60-grain tablet of calcium sulphid. This line of treatment should suit both Drs. Quitman and Zell. I am very anxious to have this mare recover, and also want to have a good line of treatment outlined for such conditions in the future. If she appears about the same in the morning, I am going to continue my present treatment and give 100 cc of Flavisol.—W. A. B., Illinois.

REPLY—I differ radically from those in the profession, eminent though they be, who advocate douching the infected uterus only with normal salt solution, also still more radically with those who advocate merely the removal of the pus without any follow-up treatment.

In reference to irrigation with normal salt solution, it must be remembered that while this solution may be aseptic, or at least it should be so made, it is not antiseptic or germicidal, and it is my opinion that an antiseptic should be used.

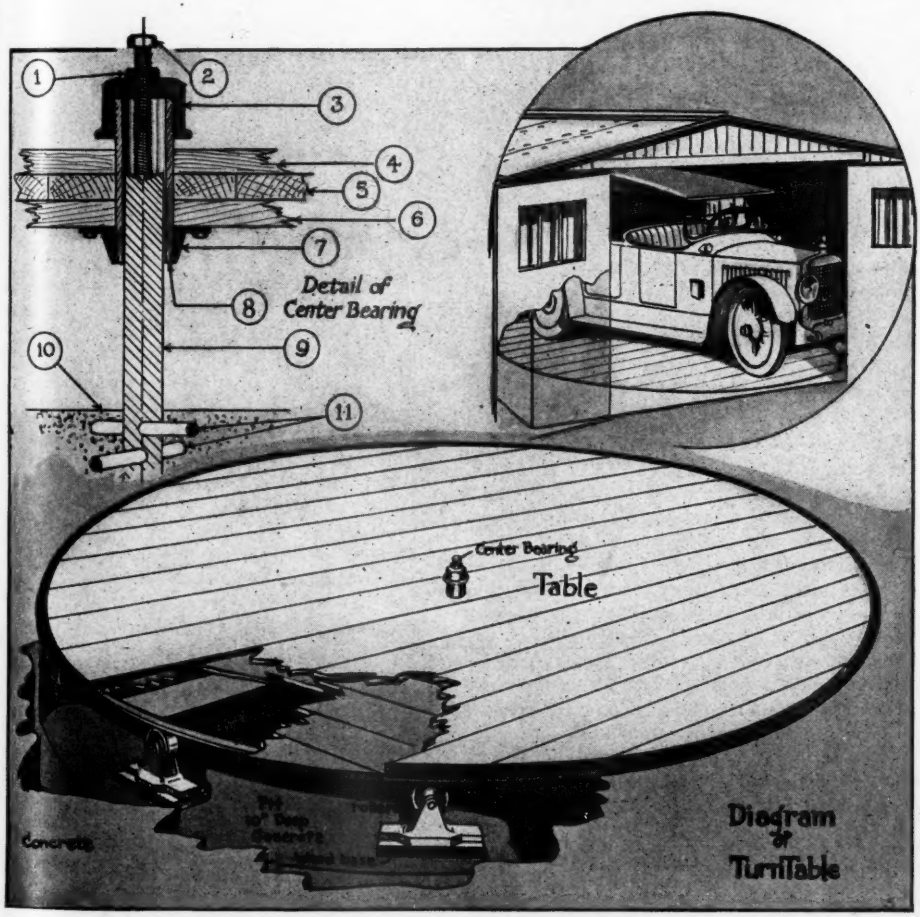
The writer's favorite antiseptic for this purpose is a concentrated Dakin's solution known as Hychlorite. However, in its stead, chloramine will do. The first named preparation is an inexpensive one, and for uterine douches, I use it in from one-half to three-fourths of one per cent solution.

Pointed Opinions on Live Topics

By READERS of VETERINARY MEDICINE

A Turntable for Veterinarians' Car

In a recent issue of VETERINARY MEDICINE the Editor stated that pictures of equipment are of more interest than those of monstrosities, and while I cannot send a picture of what I am about to describe, I may be able to give a description so that the Editor can get some one with more ability in using drawing instruments than I possess to draw a picture of it.



This turntable has been in constant use for

nearly four years, with absolutely no trouble of any kind, and the only attention given it, is to clean the pit of inflammable material that might gather around its edges and oil the center bearing and the eight casters about once yearly.

The idea for this device was given me by an up-to-date carpenter and builder; the details were worked out by myself, and the table was built at an expense of about $30.00, exclusive of the labor which I did while I was resting. The object was to get away from the inconvenience of backing into a narrow alley, and to provide the convenience of turning the car (Ford in this case) toward the light in making repairs. After using it nearly four years, I do not regard it as a luxury, as the safety and satisfaction has more than paid its cost and I would not want to do without it.

In country practice, it is common to have the side curtains on a car for a good part of the year and often they are mudded over so much that when backing a car, it is nearly impossible to see what one may back into or what collisions from the rear may happen. By the use of the turntable, one may always look ahead and should be able to see where one is going and what may be coming.

I enclose a rough drawing with some illustrations that may be of help in understanding my description.

The space for the turntable and car should be square and of a size that will be about two or three feet more than the length of the car. Sixteen feet is a very good size for a Ford, which is probably used by more veterinarians than any other make. The floor should be of concrete and about four inches thick. In my case the pit for the turntable is twelve feet one inch in diameter. The table is twelve feet in diameter leaving one-half inch in clear space around the table. The pit is ten and one-half inches deep with a floor of rough concrete. The floor is sloped enough for drainage to a tile placed in one edge to carry off any water that may gather from being froze on the car and thawing after it is inside where it is warmer.

A piece of 1⅜ inch shaft with a couple one-half inch irons about 6 inches long in holes near one end forms the center bearing in the pit and imbedded in the concrete in the exact center of the pit in a vertical position so that the top end is about one inch below the edge of the pit. The top end of this shaft is cupped to provide for holding oil and the adjusting bolt of that part of the center bearing that is attached to the table.

The table consisting of two layers of pine plank crossing each other and all thoroughly nailed together (as 5 and 6) with one plank cut about 16 inches short, nailed on the under side of the lower layer (No. 4). A flat rail, 1½x¼ inches in section about 4 feet long, fastened with screws to the under side of the table 6 inches from the edge provides a place of contact with the 8 casters which carried the main part of the load.

These are heavy box casters with a four-inch wheel fastened with bolts set in the floor of the pit by drilling holes, then setting the bolts in babbit. A piece of wood 2x4x8 inches is placed between the floor and the casters to provide a sort of cushion and a means of leveling the casters which was done by thinning the wood till the proper level of the caster was reached.

These casters being set so that the wheel is 6½ inches from the pit wall and with the wheel up provides a good bearing for the outside of the table and one that will not fill with dirt and clog.

The center bearing parts on the table consist of first, 1½ inch floor flange placed on the under side over a hole in the center of the table, about 2¼ inches, with the flat side up. Into this is then screwed a nipple of 1½ inch pipe about 5½ inches long, on this is screwed a pipe driving cap which had been drilled and tapped for a ⅝-inch bolt. This bolt should be about two inches long, threaded to its head and provided with a lock nut. An oil hole was also drilled into the cap to provide means of oiling the center bearing.

Four eye bolts set at equal distances in the top of the table a few inches from its edge provide means for lowering it in position.

I will say that the table was partly built downside up, then turned and placed in position, then the final nailing of the top of the planks was completed.

As a test, the adjusting bolt was screwed down so that the weight of the table and a Ford car was all on the center bearing, the car being balanced quite well and a three-pound pull on the edge of the table started it turning and a two pound pull kept it moving, but that is too easy and I am afraid to

have it run that easy as I might take a skid on it and get going around and be unable to stop for dinner.

I don't want you to think I am writing an article for Popular Mechanics but you seemed to want something different than ordinary so here you have it. I would prefer that you would not use my name if you make use of it, but I stand ready to exhibit the article in question to any who care to see. I realize that it would be almost impossible to get a photograph that would do it justice, hence my attempt at pencil sketching and word painting.—Illinois.

PITFALLS IN OVARECTOMY IN MARES.

Case 1. An old friend, a non-graduate, asked me to spray a troublesome mare for him and said Dr. F, a recent graduate of the Ohio State University, would like to witness the operation. I agreed and advised exercise and restricted diet for the patient preparatory to the operation.

When I went to the place for the operation I saw a full manger of good hay and a general purpose mare that had been idle in stall for six weeks, eating slowly, as if she were already pretty well satisfied. I suggested that the young doctor operate this time, but he declined with thanks.

We administered a drench of twelve drams of chloral hydrate dissolved in one quart of warm water; applied the Zeigler harness and hopples. An inch rope secured to the side of the stall and passed around breast and along side, like a breast strap harness, and a trace, and tied to the side of stall back of the rump.

We used antiseptic and disinfecting solutions, and found it almost impossible to introduce my hand with the knife into the vagina on account of the tenseness of the abdominal viscera from overfilling. I finally, with much difficulty, got my hand with the ecraseur chain through an incision in the roof of the vagina. Owing to cramped conditions I couldn't tell what I was doing and I got a chain over a dung pellet in the bowel and removed it.

We enlarged the opening in the vagina and pulled the injured bowel out and the young doctor sutured and closed the wound. The other two doctors treated the case for thirty-six hours till diffuse and general peritonitis ended fatally. So much for disregard of instructions concerning the preparation of the patient and for my asininity in operating under the conditions. Both of us knew better, but we did it again!

Case 2. Three years later, I was asked by my old friend referred to above to operate on a 1600-pound draft mare that was very troublesome and had been idle in her stall for about six weeks. Dr. G., a recent graduate of the Ohio State University, asked to witness the operation. I agreed. I asked that the mare be starved and exercised for a few days. No attention was paid to this request.

We three met at an appointed time. I saw a full manger of good hay and a very fine large mare that had not been out of the stall for fully six weeks. The location was a roomy warehouse with concrete floor; the stalls and mangers were temporary and unattached to the building.

I mentally decided to let the other veterinarians have entire charge of all arrangements except using knife and ecraseur. The warehouseman and three drivers assisted us. The driver climbed over the side of the stall and brought the mare out on a halter and secured halter chain to an upright post in the middle of the building. No one could bridle or secure mare for giving anesthetic on account of her viciousness. Finally we got a twitch on the upper lip and got a Zeigler harness and hopples secured for casting on an improvised bed of straw.

We finally had the animal secured for the operation. The old veterinarian put four ounces of chloral hydrate in an eight-ounce bottle, filled it with water and handed to me. I said: "Doctor, you ought to have had this dissolved in at least two quarts of warm water." He said this was all right, as he had seen them using it that same way at A. V. M. A. clinics. I remained silent and passed this bottle to the young doctor to administer. Three men held her head and the patient fought and the young doctor got his hand badly bitten in his attempts to do the drenching.

The patient coughed and exhibited much distress and disturbed breathing and discharged almost half a bushel of froth from the nostrils. Both the other doctors and all the helpers said the mare would die in a few minutes, but I said let us operate now.

We applied the usual antiseptic and disinfecting solutions.

The fullness of the abdomen and the cramped position in which she was tied, similar to side lines and figure of eight around hocks, made it impossible to get hand or instruments into vagina, and I induced the other two veterinarians to try it; they failed. We loosened the harness and took off the hopples, and got my hand in and used the knife and ecrasure and got the chain over one ovary. At this point patient struggled and got up on her feet with ecrasure in position for work; the chain slipped off and the instrument dropped on the floor and the mare trampled squarely on it, but the high heels and big toe calk on the shoes saved it from damage.

The young doctor suffered so much from his lacerated hand that he retired to see a physician. The old doctor and I decided to delay further attempts till the mare recovered from this experience, and she was turned back into her stall.

The doctors were worried and never went to see the patient, but she lived about two weeks and got in bad condition, and the owner had her destroyed

It is my purpose in relating the above to impress students and graduates with the necessity of observing the recorded facts supplied in college lectures and in text books; and of referring to these facts and posting up fully before attempting to perform any major surgical operation.

This question now arises: Do veterinarians ever become superannuated and incompetent, to direct major surgical operations or apply biologicals in testing for tuberculosis, glanders, or in combating hog cholera, rabies, anthrax, black leg, etc.?

The U. S. Army retires officers at 64 years of age, and the U. S. Navy at 62 years. I am beyond both dead lines and the Old Doctor referred to has probably forgotten when he was so young as 64. Undoubtedly there was a time in our experience when neither of us would have attempted ovarectomy in a vicious mare without proper preparation, and when we should have balked at the suggestion of such an operation without at least halfway means of restraint. Anyway the two young doctors certainly received a splendid demonstration of how not to spay troublesome mares.

JAS. WAUGH.

Pittsburgh, Pa.

HEMAGLOBINURINA OR RED-WATER IN THE OX.

A working ox was noticed to be dull and to have a diminished appetite. A day later he was passing urine the color of port wine. The coat was rough, the hair standing on end, the back arched, the muzzle dry, and the ears cold.

My diagnosis was red water. Treatment: Raw linseed oil, one pint; turpentine, one ounce; to be given at one dose.

In addition the following powders were given three times daily in a quart of water:

℞

Ammon. carb.	ʒii
Sodii. bicarb.	℥ss
Pulv. nucis vomicae	ʒjss
Pulv. Gentianae	℥ss

Give at one dose. Recovery in a few days.

It is unnecessary to enumerate the different theories as to causes of the above condition, as such may be found in text books. It suffices to say, however, that this animal was not in a herd where they were troubled with ticks, and in this particular instance I am inclined to think that the cause was due to a debilitated state of the system, brought about by innutritious food.

ERNEST F. JARDINE,
Government Veterinary Surgeon.
St. Kitts, British West Indies

REMARKS ON FELINE PRACTICE.

Not so long ago it was rare for the general practitioner to have cats as patients. Even in the present day there are clients who will apologize when they bring a cat for treatment. The usual idea is that the ordinary veterinary surgeon knows nothing with regard to feline diseases, and cares less. There is more than a grain of truth in this view, as the attempts of the equine or bovine practitioner to treat cats are often grotesque. Armed with gloves and other forms of protection against the attacks of Grimalkin, who in its resentment of rough handling utilizes the claws of both fore and hind feet, the veterinary surgeon, unaccustomed to deal with this species, imagines that he can attain his object by the adoption of force. If the owner happens to be present the scene is likely to be a lively one, and the usual result is that the reputation of the practitioner in the treatment of feline diseases is by no means enhanced. Like all departments in veterinary practice, there is an art as well as a science in dealing with the medical and surgi-

cal affections of the cat. The art can only be learned by experience, but one of the first rules to be observed is that gentleness, combined with strategy, is essential in the practice of feline medicine and surgery, otherwise the efforts of the practitioner are likely to be "dreadful in the doing" and occasionally "melancholy in the event."

It has been said that "a cat has nine lives," and however true this may be as regards the "common or garden" variety in its numerous escapades and narrow escapes, it does not apply to the highly-bred species which is most likely to figure as a patient in the veterinary infirmary. The vitality of this species cannot be described as remarkable when attacked by certain diseases, and the practitioner who is optimistic in his prognosis has to learn that a guarded opinion is especially indicated when dealing with the probable result of feline diseases.—E. W. Hoare, F. R. C. V. S., in The Veterinary News.

ABDOMINAL NEOPLASMS.

The subject of this note was wire-haired terrior bitch, about 8 years old. She was brought to the Infirmary on January 26, 1914, for examination.

Her history was that, during her life she had given birth to several litters of puppies, never having had more than five pups at one time.

About two months before she was brought to the Infirmary, she had given birth to three puppies, which she reared quite naturally. Up to that time the bitch appeared to be perfectly well and healthy in every way, but soon after that confinement her abdomen increased gradually in size, and at the same time she lost flesh and condition. The bitch was examined by Mr. J. H. Carter and by myself and though at first sight the possibility of her condition being due to pregnancy suggested itself, we both formed the opinion that she was the subject of abdimonal tumors.

Her destruction was advised, and, with the owner's consent, was carried out on January 30.

A post-mortem examination showed multiple new growths scattered through the abdomen.

One very large tumor, to which the spleen and stomach were firmly attached, weighed over four pounds.

The other tumors, which numbered over twenty, varied in size from that of a marble to that of an orange, and were attached to the viscera and abdominal wall—several being firmly embedded in the liver.

The womb was not found—presumably it had been absorbed by the large new growth or was embedded in its substance. A section of the large tumor and one of the small growths were sent to the Royal Veterinary College, London, and Sir John McFadyean, who kindly examined them, informed me that they were myxomata—Arthur N. Foster, F. R. C. V. S., in The Veterinary News.

TORSION OF THE UTERUS IN A BITCH; HYSTERECTOMY; RECOVERY.

M. R. Cholet, Veterinaire a Royan-les-Bains, recorded a case of the above unusual condition, before La Societe Centrale de Medecine Veterinaire. (The following abstract of his communication is taken from Recueil de Med. Vet.)

A hound bitch, four years old, was observed early in September by the owner to be pregnant, but he had no idea when parturition would take place. About September 13th the udder became distended, and on the 14th the animal manifested pain by whining, which continued to September 18th; the appetite was in abeyance, the appearance of the vulva did not suggest the near approach of parturition, and there was no discharge, but still the evidences of pain continued.

On September 19th the pain was less, and the appetite had highly improved, but the abdomen was distended and very sensitive to even slight palpation. The milk disappeared from the udder. The author was then called in to attend the case (September 23rd). He found the bitch dull in appearance, the visible mucosae very anaemic, the abdomen very large and extremely painful to pressure, especially at the inferior region of the left side, which was also more prominent than the opposite side. Vaginal examination did not reveal either discharge or the presence of any part of a fetus.

The diagnosis given was dystokia of maternal origin, with metro-peritonitis, and laparotomy was advised. On September 24th, assisted by M. G. Bouchet, the author carried out the operation.

Anesthesia was induced by atropin cum morphin, followed by chloroform. To combat the extreme weakness 100 c. c. of physiolo-

gical saline solution was administered.

An incision fifteen centimetres in length was made along the linea alba. On opening into the abdomnila cavity a sero-sanguineous fluid escaped, and the right uterine horn in a semi-gangrenous condition was exposed. Localized peritonitis was present, the mesentery was highly injected, and the uterine horn, which was gravid, was adherent to all the organs in the vicinity, and especially to the bladder.

The first step was to break down the adhesions, so as to have a clear view of the actual state of affairs present. During the necessary manipulations the uterine horn was accidentally ruptured by the finger. The operating-table was then raised at one end, so as to permit the fluid to escape from the ruptured horn without soiling the peritoneal cavity to any extent. When all the adhesions had been disposed of, the condition of the uterus could then be determined. The left uterine cornu was empty. The right cornua contained two pups; it had made a half-turn on itself, drawing by its weight the left cornua with it. Attempts to return the uterus to its normal position failed, so hysterectomy was carried out. The abdominal cavity was then flushed with normal saline solution and cleansed with gauze compresses. The wound in the peritoneum and muscular wall was sutured with silk, marsupialisation of the uterine stump being carried out. The skin wound was sutured with silk-worm gut. Hot water bottles and warm covering were applied to the body, as the patient was much exhausted and rather cold. She recovered consciousness very quickly, but the countenance was anxious, the mucosae very pale, and the extremities cold. An injection of 150 c. c. of normal saline solution with caffein was given, which had a good result. Next morning another injection of normal saline was given, and small quantities of milk and scraped meat were allowed.

In a few days the general condition improved, the wound healed partly by first intention, but in other parts suppuration occurred, due to the fact that the animal tore off the dressings. In fifteen days she was sent home and recovered completely.

The author concludes that early surgical interference is indicated in cases of the kind where it is clear that delivery cannot be effected by ordinary measure. In the case recorded success would hardly be expected, owing to the operation not having been performed sufficiently early, but the result showed that it was wise even to make the attempt. Expectant treatment in cases of this kind cannot be recommended, as the results are often disastrous.—The Veterinary News.

LOIN DISEASE OF CATTLE AND BOTULISM.

I have read with much interest the description of "Loin Disease" on page 24 of the July number of VETERINARY MEDICINE. As this disease is being investigated by such competent men I presume it is unwise for one like myself to make any suggestion, but the following thoughts have probably come to many cattle practitioners who have read the article, and a criticism of what I am about to say may bring out some valuable points.

The more I think of this disease the more I am impressed with the similarity of it to the disease that has lately become known as botulism. The description of loin disease does not fit that of botulism in every respect, but we have yet considearble to learn about botulism. The symptoms are not identically the same in all cases of botulism and those seen in some cases fit very closely those of loin disease. The marked absence of lesions in each and the fact that a change of pasture is likely to stop an outbreak, to me, seem quite significant.

I am much interested to see what a further investigation will reveal. H. FREDERICK.

Westtown, N. Y.

QUERY—ANSWER—RESULT.

A white farm mule, seven years old, weighing about 1,100 pounds, had a small abrasion of the skin midway between the fetlock and knee on the outside of right front leg: it was first noticed about two months ago.

The mule was running in pasture about two weeks when the owner noticed that a lump about the size of half a walnut had formed at the seat of the original sore. These lumps extend in a line up to the point of the shoulder, and vary in size from a hazel nut (round and hard) to flat circular ones the size of a half dollar. Some are formed on and some in the skin, while others are formed in the deeper tissues, especially near the shoulder. A few of the lumps on the skin have broken and healed, but the balance are about the same as when first noticed.

About ten years ago mule on this same farm was affected in a hind leg just the same as this one. I treated it for two or three months without success and the owner sold or traded it off and I lost track of it, so do not know how that case terminated.

I consider this case an infection of the lymphatics and will appreciate any advice as to diagnosis and treatment.—C. H. D., Kansas.

REPLY—We think that there is scarcely any doubt but what you are dealing with a case of Botryomyces infection. The condition is known as Botryomycosis; it is the same fungi that causes scirrhous cord. The technical term for the disease is Botryomycomata and for the organism it is botryomyces equi.

These cases usually yield nicely to iodid of potash. Your patient will require about two dram doses, three times daily. In addition, where there is breaking down of these lumps tincture of iodin, full strength, should be injected into the area. You might also inject some by means of a hypodermatic syringe, into the unbroken lumps.—E. L. Q.

In the June issue the foregoing query and answer were published. The following letter shows the result:

"Regarding the case of Botryomycomata in the mule, reported in the queries and answers department of VETERINARY MEDICINE, the suggestions for treatment were followed; that is, iodid of potash was administered internally for thirty days, the mule being worked all the time.

The mule is entirely well at this time and both the owner and myself are gratified with the results. Your advice is very much appreciated.—C. H. D., Kansas.

SUPPLY OF HORSES UNEQUAL TO THE DEMAND.

More horses would be employed in cities today if it were reasonably possible to procure more good ones. As soon as the general interest in right horse breeding slumps on our millions of farms and ranches, and an inferior quality of animal power is shunted onto the general market, city users become indifferent to horse talk and listen to motor talk every time. That is, until they begin to reckon comparative costs. Then the difference is so strongly in favor of the horse that they set up a wild clamor for heavy drafters and light wagon horses, the price soars owing to the scarcity, and the market situation reacts on the farmer because these men who cannot get animals of the right type are practically forced into the use of mechanical units.

The only remedy is intelligent and extensive breeding of draft horses and mules. Enough of the wagon horses and chunks will come along of themselves without breeding in that direction. But when use and breeding of good horses is re-established on a sane basis, the farms will be better powered, city concerns will have more efficient and dependable power at less cost, and both the farm producer and the city consumer will have more money in his pocket at the time of yearly reckoning.

The sacrifice has been needless and deplorable, but I am sincerely confident that the loss has jolted those concerned out of their apathy and that next season will see a wholesome increase of intelligent horse breeding.—Wayne Dinsmore, Chicago.

A QUARTER OF A CENTURY AGO.*

*From the Journal of Comparative Medicine and Veterinary Archives.

Dr. S. Brenton of Detroit, Mich., returns to the teaching staff of the Detroit School of Medicine, Veterinary Department.

Drs. Joseph Hughes of Chicago, A. S. Alexander of Evanston, J. F. Ryan of Chicago, H. G. Pyle of Springfield, George Ditewig of Canton, J. Stallman of Pontiac, R. C. Mylne of Aurora, A. H. Baker of Chicago and W. A. Baker of Gibson City resigned as assistant veterinarians of Illinois.

Massachusetts State Veterinary Medical Association held a meeting in Boston. The following members were present: Drs. Beckett, Cronon, Cutting, Emerson, Frothingham, Hamilton, Lee, Lewis, McLaughlin, Parker, Pierce, Soule and Winchester

Dr. Leonard Pearson of Philadelphia was the guest of his brother, Mr. R. A. Pearson in Washington during May.

The following veterinarians attended the annual horse show in Philadelphia: Drs. Otto Von Lang, W. Horace Hoskins, A. F. Schrieber, W. N. Fuller, J. J. Harger, M. W. Drake, C. J. Marshall, Leonard Pearson, Otto Noack, S. D. Larzelere, W. H. Montgomery, W. H. Ridge and A. W. Clement.

Dr. R. S. Huidekoper of New York has just received the appointment of lieutenant-colonel in the U. S. Army.

Mr. J. Preston Hoskins is assistant Professor in German at Princeton University.

In addition to taking care of his veterinary practice Dr. Harry Marshall is conducting a drug store at Georgetown, Del.

Dr. J. R. Mitchell of Evansville, Indiana, after two days' service in the Bureau of Animal Industry, resigned his position and returned to his home.

Dr. W. C. Fair of Cleveland, Ohio, is editor

of the Veterinary Department of the American Sportsman.

Dr. W. L. Williams announces his permanent withdrawal from practice and is advertising his property at Bloomington, Illinois, for sale.

Dr. C. A. White is assistant to Dr. Joseph Hughes at the Chicago Veterinary College.

Durlands Riding Academy has the most successful year in its history. The bicycle is attributed as factor toward creating interest in horseback riding because of the interest it has developed in out-door sport.

Dr. J. P. Turner resigned his position in the United States Army to enter the Bureau of Animal Industry. He was assigned to the meat inspection service with headquarters at St. Louis.

Dr. Harry D. Gill of New York City enjoyed a very prosperous year with his string of race horses.

Dr. George P. Biggs, Secretary of the New York College of Veterinary Medicine, and Miss Florence Browning were married at the Fifth Avenue Presbyterian church in New York.

Dr. D. E. Salmon of the Bureau of Animal Industry visited Texas to investigate the method of dipping cattle for extermination of ticks.

Dr. Louis A. Klein has resigned his place as veterinarian at the Vanderbilt estate in North Carolina to enter the meat inspection service with the Bureau of Animal Industry.

Dr. E. C. Porter received the nomination for Coroner on the Republican ticket at Newcastle, Pa.

Dr. J. L. Tyler has quit practice at Chebanse, Ill, to engage in the practice of human medicine at Jackson, Miss.

Dr. M. H. Reynolds of Minnesota delivered an address on the subject of "State Control of Hog Cholera" to an audience of farmers at Albert Lea.

Dr. G. A. Johnson of the B. A. I., has been transferred from Kansas City to Sioux City.

Dr. Maurice O'Connell is city veterinarian at Holyoke, Mass. The position carries with it a salary of six hundred dollars a year.

Dr. U. G. Houck is now in charge of the B. A. I. inspectors at Sioux City, Iowa.

Dr. E. L. Kellner sings in the choir at the Church of the Epiphany at Philadelphia.

Drs. John Unertl and R. A. Higgins of Wisconsin are under fire by the State association because of their connection with a livestock insurance company.

Dr. A. T. Peters of Lincoln, Neb., read a paper on the subject of "Immunity" at the Iowa Veterinary Association meeting in Des Moines.

The following attended the annual meeting of the Missouri Valley Veterinary Association at Kansas City: Drs. S. Stewart, R. C. Moore, B. F. Kaupp, R. P. Steddom, G. A. Johnson, G. C. Pritchard, E. H. Biart, J. B. Black, F. W. Hopkins, J. H. Cock and W. A. Heck.

Among those in the graduation class of the American Veterinary College is John Francis Devine of Rhinebeck, N. Y.

TREATMENT OF SEPTIC-METRITIS WITH ANIMAL CARBON*

The successful treatment of acute and chronic enteritis with animal carbon encouraged the writers to perform some experiments with animal carbon on cows affected with septic metritis, which was well indicated on account of the fact that the present method of treatment in these cases with irrigational system of various antiseptic solutions did not give the expected result. Wiechofski and his co-operatives deducted from thorough investigation that animal carbon acts not only physico-chemically on the morbid substances and absorbs bacteria, but with their crystalloid more so than with colloid (Bacteria) toxin forms an irreversible mixture, which has a prohibitive effect on inflammatory and putrefactive processes. Therefore, from the use, in particularly septic metritis, good results can be expected. At the time of this experiment an article was published along the same line of work by Novak, in which he described excellent results from the use of animal carbon in septic metritis in women; out of two cases, one case with one treatment of animal carbon resulted in complete recovery, while in the other, visible improvement.

The writers of this article experimented on fourteen cows with septic metritis, eight cases with retained placenta, which had to be removed by physical force; in two cases infection resulted from difficult perturation where the assistance was given by laymen, while the other four presumably followed normal perturation with properly passed placentae.

The treatment of all of these cases was the same in so far that the uterus was cleansed

*Abstract from the Allatorvosi Lapok, P. 102, 1919. By Dr. Reisinger, Prof. of the Vienna Veterinary College, and Drs. Heller and Veisineer.

with warm sterilized water (in cases where removal of the placenta was necessary they were removed mechanically), then drained from uterus, then washed with fluid paste made from animal carbon in the proportion of 1 to 25 of water, well mixed. The quantity of carbon was varied to the size of the uterus. The average dose was fifty grams with about one liter of water. In cases where the uterus was slightly or not at all contracted, larger doses were given from 100 to 300 grams.

All these fourteen animals used for this experiment recovered within a period of 8 to 17 days, in one case from which bacilus of Bang isolated, one carbon treatment was necessary; in three cases, two; in four cases, three in two cows, four and in four cows, five were necessary. The improvement was very noticeable in cases where the metritis had produced general systemic diseased conditions. The temperature after one carbon treatment was reduced to normal, the appetite and lactation also improved. It is also worthy to be mentioned that none of these animals developed arthritis (in hock joints) which is such a common complication to septic metritis.

The animal carbon will not irritate the mucous membranes. Therefore, it can be used with good success in catarrhal, as well as septic metritis. Out of nine cases of catarrhal metritis three recovered from one administration of carbon; three from two; one from three; one from four; and in the last, five carbonal irrigations were necessary. In two cases of pyometritis, one required two and the other three carbonal irrigations to effect a complete recovery.

M. Borros.

Ft. Worth, Texas.

THERAPEUTIC SUGGESTIONS

Sarcoptic Mange

This is the common variety and the following prescription is of service for all animals from the kitten to the horse or cow.

It has the virtues of being inexpensive, easily applied and highly curative. Of course, when the disease occurs in a great number of animals, dipping is the rational method of treatment.

Best results, follow in all forms of mange when the patient is properly prepared previous to the application of the remedy. This consists of clipping and thorough scrubbing the skin with green (soft) soap. The skin must be perfectly dry before applying the lotion:

℞ Ol. picis liq.
Ol. crudi .....aa Oj
Petrolati liq. qs ad..... Cj

M. Sig. Rub in thoroughly.

Let the patient alone for five or six days, then wash with the green soap; let dry and make another application for safety sake.

One application usually produces the desired result and rarely are over two required Give orders for thorough cleaning of the animal's quarters, harness, etc., to prevent reinfection.

Regarding the drugs, commercial oil of tar will do for this purpose as well as the official. As to the crude oil, Beaumont crude, if it can be obtained, is preferred on account of its large content of sulphur (said to be about 10%) in natural solution. The second choice is Kansas crude oil on account of its blandness.

If this latter cannot be obtained, use any crude oil, but distillates are not dependable.

While I have prescribed liquid petrolatum in the prescription, I use White Rose neutral oil (Standard Oil Company) in its place in my own practice. It costs less than half as much as the official liquid petrolatum and is equally serviceable. Adding sulphur to the above prescription does not increase its curative properties whatever.—E. L. Q.

N. Y. VETERINARY MEDICAL SOCIETY HOLDS MEETING IN BUFFALO.

The New York Veterinary Medical Society held their 34th annual meeting at the Hotel Lafyette, Buffalo, July 27-29, President Wright Smith of Kingston opening the meeting.

Among the important resolutions presented by the resolution committee was one dealing with the discontinuance of the publication of the papers presented at the meeting and turning them over to the veterinary journals that are in a position to publish and so distribute papers of worthwhile interest.

Dr. Otto Faust as delegate to the A. V. M. A. pointed out the importance of the meetings of the Hon. D. Sweeney, representing the Mayor of Buffalo, welcomed the society to the city with an earnest and cordial welcome. Dr. Chas. S. Chase of Bay Shore, N. Y., responded ably for the society and the profession. President Smith then read an address of many merits. It was not too long, it embodied important things, and carried constructive suggestions.

this great association and urged all to attend the coming meeting in Denver.

Abortion Increases—Glanders Decreases.

The report of the Committee on Diseases was presented by Dr. W. Reid Blair, Chairman, and dealt mainly with the seriousness of tuberculosis and abortion in cattle and swine, and some of the ailments in the smaller animals, which are becoming more prevalent, for instance, enteritis in cats and the numerous ailments of poultry.

It is gratifying to have reached the time when this committee could report glanders steadily on the decrease in this state. In 1914 nearly 2,000 horses were condemned, while in 1920 the number was less than 100. Necrobacillas is in various animals and mastitis in cattle has been reported to the committee to be on the increase in New York.

The first paper was by Dr. L. A. Norget: Importance of Correct Diagnosis. This was a very interesting paper; Dr. Norget dwelt on the importance of a careful examination and the pitfalls that occur in everyday practice, making particular mention of errors in the diagnosis of lameness.

The paper was discussed by Drs. Berns, Thompkins, Reid Blair, Hollingworth and DeVine.

Spermatic Secretions by Dr. P. A. Fish was an unusually interesting paper. This paper should be of interest to all veterinarians, and of particular interest to those giving special attention to animal breeding.

Hookworm Disease in Dogs, by Dr. Reid Blair, was very interesting and will be published in an early issue of Veterinary Medicine.

A banquet was held in the evening at the Lafayette Hotel, the ladies being present. This was fortunate, as it gave them an opportunity to listen to a very fine address by Dr. V. A. Moore, on The Veterinary Profession, and to learn of Dr. Hollingworth's fondness for the ladies and how foolish Blair and DeVine could be.

Dr. E. L. Volgenau, one of the speakers, spoke words of encouragement and wisdom as to the outlook of the veterinary profession.

Dr. Moore in his address gave a brief history of the origin of professors and universities; he spoke of the relation between human and animal disease, the history of teaching, the necessity of changes, the gradual evolution to a diploma and still later a license to practice a profession. He pointed out that similar changes have been going on in other callings, such as mechanics. The result of these changes in our own profession has brought about the necessity of special and diversified knowledge on the many problems and the different animals that are now within the domain of veterinary science. The present depression of conditions in general must naturally affect the veterinary profession, but should be looked upon with the same fortitude by our profession as any other profession or calling.

Dr. J. G. Wills also spoke briefly on some of the important problems brought out by Dr. Moore.

Breeding Problems in Dairy and Beef Herds.

The first paper on the following day was presented by Dr. W. L. Williams, on Observations on Reproduction in a Purebred Dairy Herd.

This paper constituted rather a complete history of a certain herd with data showing the low breeding efficiency of the herd at one time, the character of the trouble, the bacteriology and pathology of the infections, the method of handling and the ultimate results which was a gradual elimination of the non-reproductive animals and the building up of a very fertile herd. Not the least interesting fact brought out was that a study of the bulls, some six in number, incriminated them as being disease carriers and proved some of them to be seriously lacking in potency.

Dr. W. L. Williams then read a thorough and carefully prepared paper on Observations on Reproduction in a Purebred Beef Herd.

This paper was a resume of his experience in a large beef herd in the Hawaiian Islands. troubles in this herd and the method of handling them. This paper will be published and we cannot recommend it too strongly for the careful study of those interested in this work.

These papers were discussed by Drs. Fitch of Minnesota, Case of Ohio, Staley of Pennsylvania, Way and DeVine of New York.

Mixed Infection in Swine was the title of Dr. J. W. Benner's paper. This paper reviewed much of the recent discussion on this subject and the confusion of diagnosis. Dr. Burch discussed the paper, emphasizing the necessity of a careful diagnosis.

Dr. W. G. Hollinsworth next read a paper, the title of which was: Am I an Asset or a Liability? This was an appeal for increasing attention to humane principles toward animals and fellowmen. The paper was discussed by Drs. Chase and Moore.

Practical Appliances for the Practitioner.

Dr. C. J. Spencer next gave a splendid talk on: A Few Ideas of an Ordinary Practitioner.

Dr. Spencer is not only a practitioner but also a mechanical genius. He demonstrated many devices for restraint of animals and some novel technic in simplifying the handling of everyday cases. He had with him a nine-inch hat pin with a large head that had been removed from the stomach of a small dog, the pin going down head first, the point sticking in the throat preventing swallowing. The stomach was opened, the pin was removed and the dog made a nice recovery. Dr. Case reported a similar experience, but instead of making an opening sufficiently large in the stomach to remove the head, the pin was cut off close to the head and the latter was passed by the dog. Dr. Robert MacKellar of New York City also joined in the discussion.

A grade Hereford cow and her quadruplets, all heifers. This cow belongs to Mr. Geo. L. Butterbaugh, Gothenberg, Nebr. Dr. L. F. Nisley was called July 24 to remove the Placentae from this cow. The calves were a day old then and doing well. They are still thriving. Doctor Nisley asks "Can you beat it?" The Editor is curious to know if any can equal it.

Entertainment Features.

In the evening a delightful boat ride to Crystal Beach was enjoyed by all. The following day the large stock yards and horse markets were inspected, then a trip through the Dole Packing Plant, luncheon as guests of Mr. Dole and an auto trip in the afternoon to Niagara Falls rounded out a successful meeting and a pleasant outing for which the veterinarians of Buffalo have the everlasting thanks and appreciation of the Society.

Drs. McClelland, Volganau and Martin were indeed kept busy looking after the comforts of their friends and guests. The ladies all reported a particularly enjoyable time.

The officers for the coming year are:

President, Dr. D. Udall; Vice President, Dr. W. Reid Blair; and the faithful Dr. C. E. Hayden was re-elected Secretary-Treasurer.—J. F. DeVine.

PRACTICAL FORMULAE*

For Diarrhea in Horses, Cattle, Sheep or Calves.

℞
Cretae praeparatae.
Pulveris gambir.
Pulveris zingiberis.....āā ℥iii
Pulveris opii .....℥vi

(1) M. et divide in chartulas No. viii.
Sig. Give one powder 3 times daily in boiled flour gruel to horses.
(2) M. et divide in chartulas No. vi.
Sig. Give one powder in flour gruel 3 times daily to cattle.
(3) M. et divide in chartulas No. x.
Sig. Give one powder 3 times daily in flour gruel to calves or sheep.

For Bronchitis in Horses

℞
Antimonii et potassi tartratis.
Ammonii chloridi .....āā ℥ss
M. et divide in chartulas No. viii.
S. One powder on the feed t. i. d.

For Catarrhal Conjunctivitis.

℞
Cocaine Hydrochlor .....gr.v-x
Acid. Borici .....gr.x-xx
Aquae ad. .....℥i
S. Eye lotion.

For Intertrigo, Erythema and Moist Eczema in Dogs.

℞
Acidi borici .....℥i
Zinci oxidi .....℥ss
M.
S. Apply externally as dusting powder.

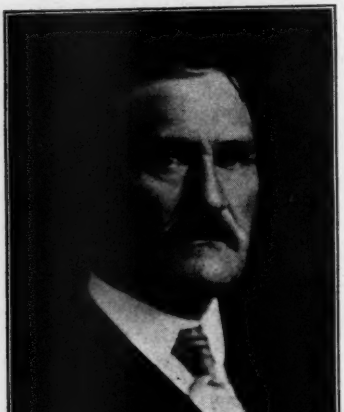
Dusting Powder.

℞
Aluminis exsiccati .....℥i
Acidi salicylici .....℥ii
Carbonis ligni .....℥ss
M.
S. Apply externally as dusting powder.

For Acute or Chronic Nasal Catarrh of Dogs.

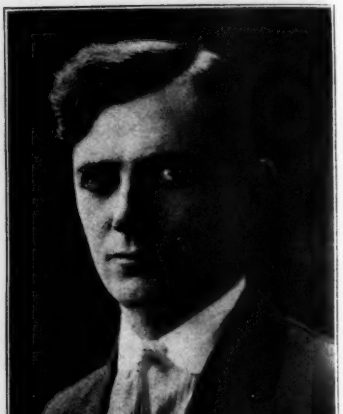
℞
Mentholis .....℥i
Chloroformi .....℥ii
M.
Sig. Instill x drops in each nostril 3 times daily with medicine dropper.

*From Winstow's Veterinary Materia Medica.



DR. GEO. W. DUNPHY.

Retiring state veterinarian of Michigan. Doctor Dunphy is dean of the profession in Michigan and has long been prominent nationally in A. V. M. A. matters. He retired from the position of state veterinarian because of impaired health.



DR. B. J. KILLHAM

The new state veterinarian of Michigan. Doctor Killham was graduated from the McKillip Veterinary College in 1912. He has been in the U. S., B. A. I. Service and located in Michigan.

DR. A. T. PETERS.

Retiring state veterinarian of Illinois. Doctor Peters has just completed twenty-five years of public service. Approximately half of this time was served at the head of the Department of Animal Pathology in the University of Nebraska. Doctor Peters was State Bacteriologist of Illinois for eight years and state veterinarian of Illinois during the past four years. He leaves the public service to assume the management of the Vitamineral Product Company, Peoria, Illinois.

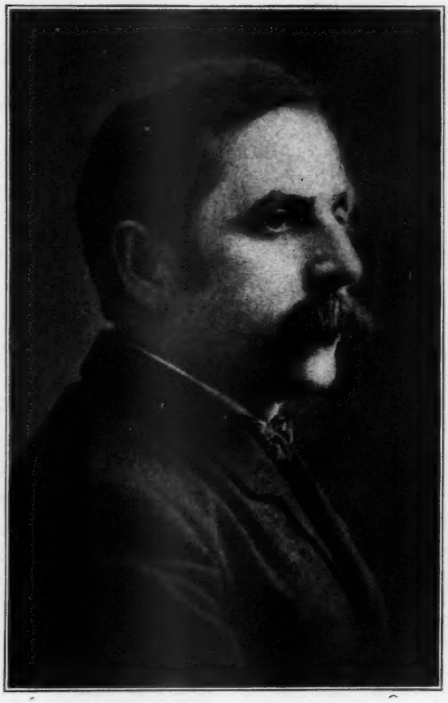
DR. F. A. LAIRD.

The new state veterinarian of Illinois. Doctor Laird was graduated from the Chicago Veterinary College in 1902 and has been engaged in practice at Auburn, Illinois, ever since graduation. He has been prominently identified with the horse interests in the state and in much demand as a judge at county fairs both for show horses and in the races.

Doctor Hoskins Is Dead

Dr. William Horace Hoskins, dean of the New York State Veterinary College at New York University, died August 10, at his home, 135 East Thirtieth street, New York, after an illness of many weeks.

For more than a third of a century Doctor Hoskins has exerted a tremendous influence on the veterinary profession of America. In shaping the trend of things veterinary few surpassed him. In impressing upon the public the importance of the veterinary profession in our scheme of civilization he stood without a peer. His struggle for better recognition of the veterinarian in the army which extended over a period of 25 years has few if any parallels in American politics. His indefatigable efforts for state recognition of, and appropriation for, the school to which he devoted the last few years of his remarkably active life have not been equaled on behalf of any other veterinary school, state or private.



DR. WILLIAM HORACE HOSKINS.

Doctor Hoskins graduated forty years ago last March from the school of which he was dean at the time of his death. For many years he was professor of veterinary jurisprudence in the veterinary department of the University of Pennsylvania. For more than thirty years he was in general practice in Philadelphia. In 1899 he was a candidate for Mayor of Philadelphia, and though defeated, polled more votes than any other Democratic candidate for that office has ever received. In 1913 he was prominently mentioned in Democratic circles for postmaster of his home city.

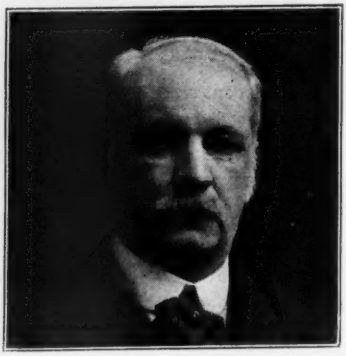
For a number of years Doctor Hoskins was editor of the Journal of Comparative Medicine and Veterinary Archives, the best veterinary publication of its time. He joined the A. V. M. A early in his professional career, and for five years, 1888-1893, served the association as secretary He was president of the association for three consecutive terms, 1893-1896. He has not missed an annual meeting of the association in thirty-five years, a record for attendance that has not been equaled in that association. In the councils of the A. V. M. A. he took a very active part, and no one wielded a greater influence. He took sides on nearly every issue coming before the association, and was either a staunch supporter or a formidable antagonist of nearly every measure. A middle ground position was never entertained by him. An excellent public speaker, a resourceful strategist, a tireless worker and an absolutely fearless fighter, his attitude for or against a proposal counted for much, and was always a matter of concern.

Doctor Hoskins was 62 years old at the time of his death. Interment was at Rochdale, Pa., his birthplace. He is survived by a widow, two sons, Dr. H. Preston Hoskins of Detroit and Dr. Cheston M. Hoskins of Philadelphia, and a daughter, Mrs. Margaret E Hofstetter, also of Philadelphia.

DOCTOR GRANGE DIES AFTER LONG ILLNESS.

Dr. E. A. A. Grange, Principal Emeritus of the Ontario Veterinary College, died on Monday, July 25th at his residence, 34 Chicora Avenue, Toronto.

Dr. Grange was born in London, England,



DOCTOR E. A. A. GRANGE.

and came to America at an early age. He received a thorough education and graduated from the Ontario Veterinary College in 1873. For a time he was veterinary instructor in the Ontario Agricultural College, Guelph, and later was professor of Veterinary Science in the Michigan Agricultural College and still later principal of the Detroit Veterinary College.

Dr. Grange was the first state veterinarian of Michigan.

When the Ontario Veterinary College was taken over in 1908 from Dr. Andrew Smith, Dr. Grange was placed in charge as principal, and this position he occupied for ten years. He retired in July, 1918, and was succeeded by the present principal, Dr. C. D. McGilvray.

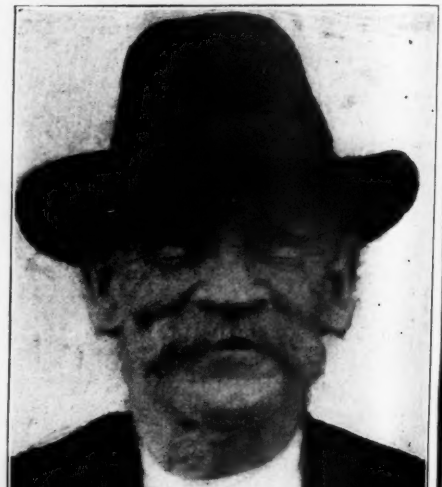
Dr. Grange was a very modest man, but a considerate and sympathetic gentleman in the truest sense of the word. He was very popular as lecturer. He was a very witty man and those members of the A. V. M. A. who were fortunate enough to hear his speech of invitation extended to the association in San Francisco in 1910, to hold their next meeting in Toronto, will recall with pleasure that entertaining speech.

It was the writer's good fortune to have been a student under Dr. Grange in the Michigan Agricultural College and two years after graduation, his assistant. I was never associated with a more thoughtful, helpful or more sypathetic gentleman. To the hundreds of students who knew him, his death will bring sorrow. Dr. Grange was a great lover of horses and an expert rider.

He joined the American Veterinary Medical Association in 1890 and has taken an active part in the work of the association, until failing health compelled him to lessen his work.

Dr. Grange leaves a widow, one daughter and one son, the latter having rendered distinguished service in the Royal British Air Force during the World War.

Chicago. N. S. MAYO.

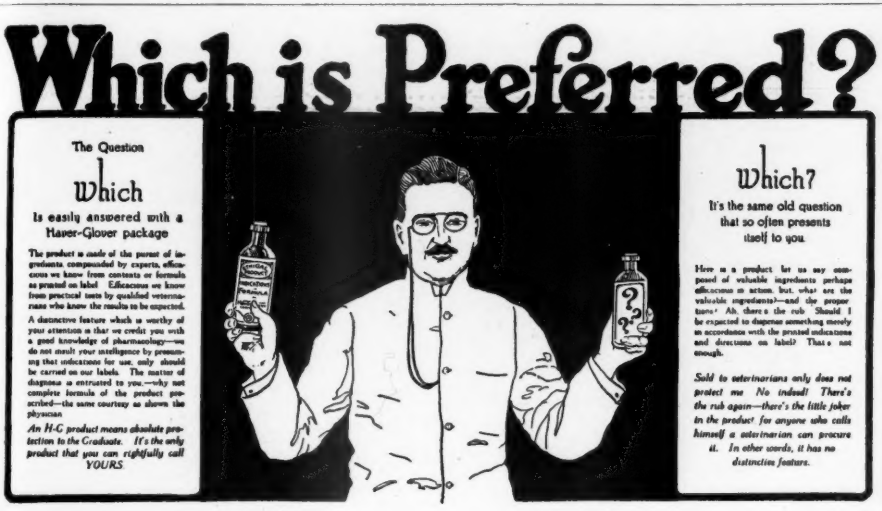


DR. JAMES CHARLES CURRAN.

A veterinarian of Brooklyn, N. Y., who died recently. At the time of his death, Doctor Curran was more than one hundred years old and had lived in Brooklyn seventy-five years, coming there from Ireland, the land of his birth, when twenty-five years old. He cast his first vote for James Buchanan for president and served in the Civil War with the New York regiment. He was married three times and is survived by three sons and two daughters.

The Haver-Glover Page

PUBLISHED EVERY NOW AND THEN IN THE INTERESTS OF GRADUATE VETERINARIANS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Which?
It's the same old question that so often presents itself to you.
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IN our opinion, the charlatan is a menace to public welfare, in that by subtle methods of deception he often holds the confidence of the credulous when they should have the attention of a skillful veterinarian. Moreover, this despicable preying upon live stock owners must be at the expense of honorable members of the veterinary profession whose sense of dignity and professional pride commits them to a modesty and constraint that frequently permits unethical competition to infringe upon their rights.

The use of special veterinary preparations should be confined to the qualified practitioner. To place in the hands of the licensed quack a product with complete indications for use is enabling him to compete with the Graduate. In short, his veterinary education is dependent upon recommendations and suggestions conveyed by the package at hand.

In this regard we might mention that it has been observed that exaggerated claims have been made by some manufacturers as to the uses of their products. This, unfortunately, has somewhat impaired the confidence of many members of the profession, to the extent that they hesitate to administer any preparation that does not contain complete formula or contents. However, with this information the uses and dosage may be regulated to suit the case at hand.

This advantageous feature was foremost with us in marketing our products, especially for use by practitioners with a complete knowledge of materia medica and pharmacology. Our advertisements have therefore been largely based on this fact as a contrast to those products with exaggerative claims for indications only. This contrasting of truth, we believe, will bring about a deal of sober and profitable reflection and will have the moral support of the really influential members of the profession. We have not hesitated to declare our policy or service to *Graduate Veterinarians* only, and we make bold to inquire as to whether or not our policy is in keeping, in your opinion, with the best interests of the veterinary profession.

In defense of his own professional character the high-minded practitioner shuns the charlatan. And the same keen sense of professional duty prevents him from prescribing or sanctioning the use of preparations without complete formula of product prescribed.

The favor in which Haver-Glover products are held by the better element of the veterinary profession is due, at least in part, to that community of interests which exists between those who concur in the interpretation of proprieties.

What Is a Veterinarian?

Does the term "Veterinarians Only" mean "Graduate Veterinarians only"? Ask your supply company.

Don't actions speak louder than words?

Matters of Current Interest

Dr. A. H. Kettlehon is now installed in a new and modern veterinary hospital at Columbus, Wis.

—o—

Dr. Legginhaufe has established a practice in Fon Du Lac, Wis., and will specialize in the treatment of swine diseases.

—o—

Dr. W. H. Lytle, at a recent meeting of the Live Stock Sanitary Board, was appointed State Veterinarian of Oregon for the sixth consecutive time.

—o—

The 1922 meeting of the North Carolina State Veterinary Medical Association will be held at Asheville.

—o—

Dr. S. P. Holtz is now located in West Point, Iowa.

—o—

Dr. W. T. Johnson, a recent graduate of the Texas A. and M. College, is now practicing in Galveston, Texas.

—o—

Dr. Bruce D. Kennedy of Ottawa, Ontario, has recently moved to larger and more up to date quarters. He now conducts a Dog and Cat Hospital, and boards and sells dogs, cats and rabbits as a side line. He states it pays very well.

—o—

Dr. G. S. Weaver, extension specialist in animal diseases at the South Dakota Agricultural College, was reelected president of the South Dakota Veterinary Medical Association at its recent meeting at Madison. Dr. William F. Joseph, Iroquois, was chosen to succeed himself as secretary and Dr. J. W. Briggs, Brookings, who is connected with the United States Bureau of animal industry, was elected vice-president. The association will meet next January at Sioux Falls.

—o—

Drs. W. F. Carey and J. W. Foley are now engaged in a partnership practice at Fon Du Lac, Wisconsin.

—o—

At the annual meeting of the Oregon State Veterinary Medical association held in July Dr. W. G. Moorehouse of Salem was elected President. Drs. E. L. Glaisyer of Tillamook, D. W. Miller of Corvalis and E. R. Derflinger of Eugene were named vice-presidents and Dr. B. L. Simms of Corvalis, secretary-treasurer.

—o—

Dr. G. A. Jones of Sello-Wooley, Wash., was elected president of the Washington State Veterinary Medical Association at the annual meeting held in Seattle in July. Dr. J. H. Woodside of Redmond was named vice-president and Dr. Carl Crozier of Bellingham, secretary-treasurer.

—o—

Dr. C. F. Woods, 60 years old, died at his home in Anacortes, Wash., recently. Dr. Woods came west from Ontario in 1884 to take the post of veterinarian with the Northwest Mounted Police at Medicine Hat.

—o—

Dr. C. W. Lassen of Pendelton is a new member of the Oregon State Examining Board. He succeds Dr. F. T. Notz of Baker, resigned. The other members of the board are Dr. W. H. Lytle, State Veterinarian and Dr. J. M. Creamer of Portland.

—o—

Thrombosis caused the death of "Minnie," an elephant in the Brookside Zoo at Cleveland, Ohio, according to the report of Dr. J. B. Considine, city veterinarian.

—o—

Dr. F. E. Barnes of Waxahachie, Texas, was bitten by a dog suffering with rabies recently. Dr. Barnes took the Pasteur treatment at Austin.

—o—

Dr. James B. Paige, Professor of Veterinary Science in the Mass. Agricultural College, Amherst, Mass., is reported in ill health.

—o—

Dr. V. H. Cubela has recently purchased and taken over the practice of Dr. F. E. Sillick at Black River Falls, Wis.

—o—

Dr. W. A. Parks, formerly of the Sioux Serum Company, is now practicing in Manchester, Iowa.

—o—

At the annual meeting of the New York State Veterinary Medical Association held in Buffalo last month, Dr. D. H. Udall of Ithaca was elected president, Dr. W. Ried Blair of New York City vice-president, and Dr. C. E.

B-D
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No. 230 Berkshire
A special Thermometer designed for those working among swine.

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A general utility Veterinary Thermometer of the highest quality.

Shown above are two of the thirty-four different B-D Veterinary Thermometers listed in our 1920-21 Catalogue. Ask for a copy and use it to identify for your dealer the brand, size and design of thermometer you wish him to carry in stock for you.

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Salt Solution

Water will not immunize hogs

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THERE IS NO SCIENTIFIC REASON FOR DILUTING SERUM. THE ADDITION OF WATER ADDS NOTHING TO ITS IMMUNIZING VALUE, AND SERVES ONLY TO CONFUSE EITHER THE VETERINARIAN OR THE HOG OWNER.

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LEDERLE'S ANTI-HOG CHOLERA SERUM IS NOT DILUTED. IT THEREFORE COSTS MORE PER CUBIC CENTIMETER

THAN DILUTED SERUMS BUT IT ALSO POSSESSES RELATIVELY GREATER IMMUNIZING VALUE.

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We offer this clear, refined and undiluted serum direct to veterinarians only, at a net price of two cents (2c.) per c. c., with shipping charges prepaid from our nearest office

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Water will not immunize hogs

DO ONE THING AND DO IT WELL

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Hayden of Ithaca secretary-treasurer. The 1922 meeting will be held in Syracuse.

—o—

Dr. C. H. Stevens of Stevensville was named president, Dr. O. L. Devore of Bozeman vice-president, and Dr. H. Marsh of Helena, secretary-treasurer of the Montana Veterinary Medical Association at the annual meeting held in Bozeman in July. Billings will be the 1922 meeting place.

—o—

Dr. F. H. McCarthy of Pottsville, Pa., was named a member of the State Board by Gov. Sproul last month.

N. D. Veterinary Association Skips Annual Meeting.

Due to the fact that a short course on tuberculosis was scheduled for the week preceding the regular annual date of the North Dakota Veterinary Medical Association meeting it was decided by the officers of the association that it would not be feasible to arrange for a program this year as most of the veterinarian in the State would be attending the short course and could hardly be expected to make a second trip the following week for the association meeting. It was therefore arranged that the program be held over until the next annual meeting and that a short business session be held during the week of the short course.

This business session was held on the evening of July 8th, on the lawn in front of the veterinary building of the agricultural college. The election of officers was suspended until the next regular meeting.

Dr. Jas. A. Logan was voted a life membership in the association. Dr. Logan was formerly in practice at Oakes, N. D., but due to sickness was forced to give up his practice and go to Colorado Springs where he is slowly recovering his health, at the Glockner Sanitarium.

Extensive plans are being made to put on an excellent program at the next annual meeting of the association which will be held some time during the month of July, 1922, the exact date to be decided upon later.

R. S. AMADON, Secretary.
Agr. Col., N. D.

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about three years, and by that time such damage has accrued to the land that it takes three years more to undo it.

Wayne Dinsmore.

Chicago.

Be kind to animals this week, and next week, and all the other weeks of the year. It will be hard for you to be as kind to them as they are to you.—Boston Evening Transcript.

NEW STATE VETERINARIAN IN OHIO.

Dr. Bruce H. Eddington of Mt. Sterling has been appointed State Veterinarian of Ohio, to succeed Dr. T. A. Burnett, whose term has expired. Dr. Eddington is a graduate of the Chicago Veterinary College. He practiced for six years following his graduation. Eight years ago he entered the employ of the state as field veterinarian. This position he resigned five years ago to accept the position of state pathologist in charge of the state anti-hog cholera serum plant at Mt. Sterling, which position he has since held.

MICHIGAN TUBERCULOSIS CONFERENCE.

The Michigan Tuberculosis Conference held at East Lansing June 22 to 24 brought out more veterinarians of the state than any meeting ever held in the past. All told there were present 300 of the 475 veterinarians in the state. It was the consensus of opinion that it was a really worthwhile meeting and it was suggested by some that a similar conference be held each year.

The conference was conducted by the Veterinary Division of the Michigan Agricultural College assisted by the State Department of Animal Industry and the local branch of the U. S. Bureau of Animal Industry. Dr. F. W. Chamberlain, acting dean of the veterinary division presided at all sessions and Dr. T. S. Rich, in charge of tuberculosis eradication work in Michigan, represented the U. S. Bureau of Animal Industry.

Members of the college faculty and representatives of the State Department of Animal Industry and of the Bureau of Animal Industry talked on all phases of tuberculosis eradication. In addition to this subject some time

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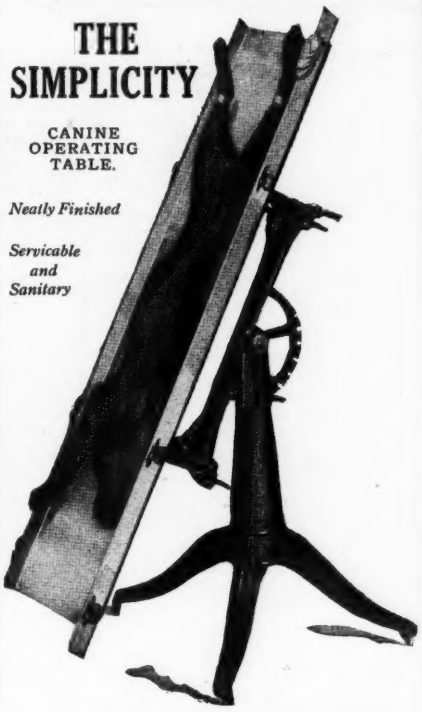

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ANTI-HOG CHOLERA SERUM

Made in the country—where the environment and surroundings are pure—free from all possible contaminating influences.

An exclusive product which should interest the veterinarian who "looks into and thinks of the future as well as the present."

Correspondence solicited from qualified veterinarians.

Lathrop Serum Co. Lathrop, Mo.

was given over to the discussion of hog cholera and sheep scabies.

One evening session was held at which Dr. R. M. Olin, Commissioner of the State Department of Health, H. W. Norton, Commissioner of Animal Industry and Hon. H. H. Halladay, Commissioner of the State Department of Agriculture, were the principal speakers. At the close of the latter's address he announced the appointment of the new state veterinarian, Dr. B. J. Killham and the new state examining board which is to consist of the state veterinarian together with Dr. B. A. Perry and Dr. E. T. Hallman. Mr. Halladay called all three appointees to the platform and introduced them amidst great applause. Following this the B. A. I. educational film, "Out of the Shadows" was thrown upon the screen.

On the day following the conference the Federal examination on tuberculosis was conducted at the college by Dr. Rich and his assistants. Most of the attending veterinarians remained for this examination. It required three large lecture rooms to seat them.

R. A. RUNNELS,
Secretary of Michigan S. V. M. A.

Dr. Fred W. Cruickshank has established a diagnostic laboratory at Hagerstown, Md.

Dr. H. O. Thompson has moved from Guttenberg to Earlville, Iowa.

Dr. A. C. Drach, formerly with the Bureau of Animal Industry, with headquarters at Des Moines, Iowa, has taken a position as traveling representative with the Corn States Serum Company of Omaha.

Dr. Drach is a graduate of the Cincinnati Veterinary College, class of 1910. He is well and favorably known in the middle west especially, and his many friends in the profession wish him well in his new undertaking.

Indiana Veterinary College

A Complete Course in Veterinary Science

GRADUATES ELIGIBLE TO ANY AND ALL SOCIETIES AND EXAMINATIONS

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A Polyvalent Anti-Hog-Cholera Serum, the Best that Science Can Produce and which Assures that High Standard of Potency Required for Good Results in the Field.

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VETERINARIANS HOLD ENTHUSIASTIC MEETING.

Through the energetic co-operation of the officers and members of the Maryland State Veterinary Medical Association, together with the leaders of the Pennsylvania, and West Virginia state veterinary medical associations, and extremely interesting and enjoyable meeting took place at Mountain Lake Park, Maryland, on August 9 and 10, 1921.

There were present about fifty veterinarians, representing the three states. The program of clinical and operative cases was furnished through the untiring efforts of that "Human Dynamo," Dr. G. A. Melody, and most of the clinical demonstrations took place on his four thousand acre farm.

The meeting was opened promptly at 9 a. m. with an address by the President of the Maryland State Veterinary Medical Association, Dr. R. V. Smith, who emphasized the necessity of hearty co-operation of all the members of the association in furthering the interests of the veterinary profession and its standing in the state. He further urged that all members present assist him in increasing the membership to include every graduate veterinarian in Maryland.

The program was next opened with a competitive demonstration of the standing castration operation, Dr. Melody against Dr. R. V. Smith, who performed the same operation in the recumberent position. Needless to say much interesting discussion arose as to the merit of each method amongst the practitioners present. However, as the two operations were perfectly performed by both operators the discussion is likely to continue indefinitely.

The next clinical case was diagnosed as an umbillical hernia in a hog, with an intestinal pistula through the hernial sac. Radical treatment was decided upon, and Dr. R. V. Smith was again elected to perform the operation. It proved an extremely interesting case, for eight inches of intestine were undergoing necrosis, and had to be excised, thus necessitating a general anesthesia, and an end to end entero-anastamosis of the small intestine. The operation was completely successful, and the hog is doing fine.

Two obscure lameness cases followed, one in the horse and another in a cow, which were diagnosed and discussed by the practitioners

present, also a peculiar example of actinomycosis.

We then adjourned for an open air lunch, which was provided at the top of the mountain on Dr. Melody's farm. The comedy of the meeting was supplied by an accident involving a barbed wire fence, and a pair of pants, which happened while racing up the mountain side for lunch.

After lunch we enjoyed the pleasure of an address by Dr. T. C. Munce, state veterinarian of Pennsylvania. He was accompanied by his assistant, Dr. Church. The address dealt mainly with the progress of the veterinary profession and its relative importance in the livestock industry. The figures involving millions of dollars annual loss from preventable infectious diseases, surprised his audience. He emphasized the advisability of our veterinary teachers devoting more time to prevention and control, and the science of prophylaxis and a little less in diagnosis and treatment.

Dr. J. A. Kiernan, chief of the tuberculosis eradication division of the B. A. I., Washington, D. C., with his forceful personality, riveted the attention of his audience for over an hour in a brilliant address covering the work of the American veterinary profession in eradication of the infectious diseases and of the importance of tuberculosis eradication.

He described how contagious pleuro-pneumonia of cattle, still raged in some parts of Europe, and would be raging here still, had it not been for the united efforts of the veterinary profession in stamping it out. The last case of the disease being reported in the spring of 1892, in New Jersey. He surprised his audience when he stated that the Kingdom of Holland alone spent $20,000,000 last year in an endeavor to "control" foot and mouth disease, while Spain had appropriated $25,000,000. The American veterinary profession was severely criticized for its ruthless slaughter method of eradication of the disease. Yet to completely eradicate the disease, we had spent considerably less than small countries like Spain and Holland are doing yearly, merely to establish quarantine regulations to "control" the ravages of the disease.

The remarkable results obtained by the Bureau of Animal Industry in freeing the South of Texas fever, by tick eradication, was the next ably described by him. He showed how

$15.00

For this large Animal Case, filled with the following assortment of practical formulae.

Tablets Acetanilid 25 grs.
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Tablets Hexamethylenamine 30 grs.
Tablets Equine Tonic
Tablets Fever
Tablets Solcreol
Tablets Alogen
Tablets Iodicalcium 5 grs.
Tablets Fowler's Solution
Tablets Iron, Arsenic and Strychnine
Tablets Sulphocarbolates
Tablets Echinacea
Tablets White Lotion
Tablets Equine Cough
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Tablets Phytolaccin
Tablets Potash Nitrate 30 grs.
Tablets Alkaline Antiseptic
Tablets Copper Sulphate 15 grs.
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ASSOCIATION MEETINGS

ASSOCIATION	PLACE	DATE	SECRETARY
Alabama Vet. Med. Assn.	Auburn, Ala.	March, 1922	C. A. Cary, Auburn, Ala.
American Vet. Med. Assn.	Denver, Colo.	Sept. 5-9, 1921	N. S. Mayo, Ravenswood, Chicago.
California State V. M. A.	Los Angeles, Cal.	June, 1922	J. P. Bushong, Los Angeles.
Central Neb. Vet. Assn.	Kearney, Neb.	Sept., 1921	L. B. Wolcott, Shelton, Neb.
Central N. Y. Vet. Med. Assn	Syracuse, N. Y.	Nov., 1921	W. B. Switzer, Oswego, N. Y.
Chicago Vet. Soc.	Chicago	2nd Tuesday of each month	J. B. Jaffray, Chicago, Ill.
Conestoga Vet. Club	Lancaster, Pa.	2nd Thursday each month	H. B. Brady
Georgia State Vet. Assn.	Macon, Ga.	Betw. Sept. 8-15, 1921	P. F. Bahnsen, Americus, Ga.
Illinois S. V. M. Assn.	Chicago	Dec., 1-2, 1921	D. M. Campbell, Chicago, Ill.
Indiana V. M. Assn.	Indianapolis	January, 1922	E. T. Davis, Plainfield, Ind.
Iowa Vet. Assn.	Ames and DesMoines	January, 1922	H. D. Bergman, Ames, Iowa
Kansas V. M. Assn.	Salina, Kans.	January, 1922	W. J. Guilfoil, Kansas City, Kan.
Massachusetts V. A.	Boston, Mass.	4th Wednesday of month	H. W. Pierce, West Medford, Mass.
Minnesota S. V. M. A.	St. Paul	January, 1922	C. P. Fitch, University Farm, St. Paul
Mississippi S. V. M. Assn.	Canton, Miss.	January, 1922	J. A. Barger, Jackson, Miss.
Missouri Valley Vet. Assn.	Kansas City	February, 1922	R. F. Bourne, Ft. Collins, Colo.
Montana Vet. Med. Assn.	Billings	July, 1922	H. Marsh, Helena
Natl. Assn. of B. A. I.	Meet with A.V.M.A	Sept. 5-9, 1922	S. J. Walkley, Milwaukee, Wis.
New York S. V. M. Soc.	Syracuse	1922	C. E. Hayden, Ithaca, N. Y.
North Carolina S. V. M. A.	Asheville	June, 1922	J. P. Spoon, Burlington, N. C.
North Dakota V. M. Assn.	Fargo	July, 1922	R. S. Amadon, Agri. Coll., N. Dak.
Ohio St. Vet. Med. Assn.	Columbus, Ohio	January, 1922	R. I. Bernath, Wauseon, Ohio
Pa. State Vet. Med. Assn.	Harrisburg, Pa.	January, 1922	R. M. Staley, Philadelphia, Pa.
Philadelphia Vet. Club	Philadelphia	4th Tuesday of month	C. S. Rockwell, 5128 Chestnut, Phila.
San Joaquin Valley V. M. A	Selma, Calif.	Sept. 7, 1921	H. B. Winteringham, Fresno, Calif.
Southern Cal. V. M. Assn.	Los Angeles	3rd Wednesday of month	J. P. Bushong, Los Angeles.
Southeastern Mich. V. M. A.	Detroit, Mich.	2nd Wednesday, January, April, July, October	H. P. Hoskins, Box 471, Detroit, Mich.
Utah S. V. M. Assn.	Salt Lake City	October, each year	E. A. Bundy, Ogden
U. S. Live Stock San. Assn.	Chicago, Ill.	Nov. 29, 30, Dec. 1, 1921	T. A. Burnett, Columbus, Ohio
Vet. Assn. of Alberta	Calgary, Alta.	September, 1921	T. E. LeClaire, E. Calgary.
V. M. Assn. of N. Y. City	338 E. 26th St.	1st Wednesday of month	J. E. Crawford, Far Rockaway
Va. S. V. M. Assn.	Richmond	January 13-14, 1922	W. G. Chrisman, Blacksburg, Va.
Wash. State Col. V. M. A.	Wash. State Coll.	2nd & 4th Tuesday of month	S. Worley, College Sta.
Western Pa. Vet. Club	Pittsburgh	3rd Tuesday of month	Fred Weitzel, Pittsburgh
Wisconsin V. M. Assn.	Madison, Wis.	January, 1922	O. E. Eliason, Madison
York Co. V. M. Soc.	York, Pa.	1st Tuesday March, June,	E. S. Bausticker, York, Pa.

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By Dr. Robert Ostertag

Translation by Earley Vernon Wilcox, A. M., Ph. D., Veterinary Editor Experiment Station Record.

This work is so well known to veterinarians the world over as being the basis on which all scientific meat inspection is planned and carried out, that any description of it for American veterinarians is superfluous

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only a very small area percentage of the original infected districts remained to be cleaned up.

He concluded his remarks by a lively discussion, on the all important subject of tuberculosis eradication. Perhaps the most surprising statement made by him was the fact that "fifty per cent of all the milk consumed in the United States is unpasteurized." This became apparent to everybody when he reminded us of the fact that pasteurization is only carried out in the larger cities, and over half the population live in rural communities where raw milk only is used. Thus he emphatically brought out the primary importance of the tuberculin test in its relation to clean milk and the health of the community. Another statement of interest to all, was the fact that 75 per cent of the States had showed only a relatively small percentage of reactors, and that the disease should be eradicated in a comparatively short time from this area. The remaining 25 per cent were badly infected and would take much longer. He stated that tuberculosis positively could be eradicated from the entire country in time, if the tuberculosis eradication administration received the wholehearted support of the veterinary profession.

The clinics were again opened, with a large ventral hernia in a Holstein cow, the case was deemed in-operable, so Dr. G. A. Melody performed the flank operation for ovariotomy, and most of the veterinarians present palpated the ovaries before their excision. Prof. R. D. Reed of the University of Maryland spoke for a short time on manipulation of the ovary.

After dinner, we were treated to a Bureau of Animal Industry Movie, entitled "Out of the Shadows," a tuberculosis picture, in story form, which was highly appreciated by the members present.

Next day, we again met at Dr. Melody's farm, and performed an autopsy on the cow with the large ventral hernia, demonstrating the hernial ring, and contents. Dr. T. A. Ladson, Inspector in Charge, tuberculosis eradication, State of Maryland, and Dr. J. H. Muller of the Maryland State Force, next completed the post-mortem examination by demonstrating the lymph glands usually involved in tuberculosis.

The great treat of the day awaited us, with Dr. John W. Adams, professor of veterinary surgery and obstetrics of the University of Pennsylvania, demonstrating the "Roaring

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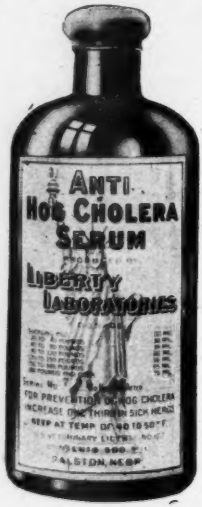

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Operation," and correct methods of anesthetization. Needless to say Dr. Adams' brilliant lecture and perfect surgery thrilled his audience.

Dr. T. A. Ladson and Dr. E. B. Simonds gave an instructive, practical demonstration of the intradermic tuberculin test, and assisted practitioners interested, in the correct operative technic and interpretation of results. Dr. W. G. Benner assisted some of the practitioners in this work.

Dr. W. E. Langford, of West Virginia, and his colleague, W. M. Stanly of Charlestown, W. Va., took an interesting part in the various discussions which took place during the day. Another distinguished visitor was Dr. L. B. Ernest, traveling inspector for the U. S. Bureau of Animal Industry, who discussed with the veterinarians present the "Bureau's work in the eradication of infectious diseases."

Some more interesting clinical cases followed, and after them the meeting adjourned for lunch.

The association next met, with Dr. R. V. Smith as president, Dr. G. H. Grapp as chairman of the executive committee, and Dr. Hulbert Young, secretary. The minutes of the last meeting were first read, then Dr. G. H. Grapp discussed the necessity for complete revision of the laws governing the practice of veterinary medicine in Maryland. He then read the proposed new laws which were, almost identical with those governing veterinary practice in Pennsylvania. A copy of these laws will be sent to every licensed practitioner in Maryland for his approval or criticism before next meeting of the state legislature.

Proposals were next suggested by Dr. Hulbert Young, for the location of the next meeting of the state association. It will take place next January, and be held probably at Baltimore, or Washington, D. C.

The meeting closed with a rising vote of thanks to Dr. G. A. Melody for his untiring efforts in making the meeting a complete success, and to Prof. John W. Adams for his kindness in coming amongst us.

Those Maryland practitioners who failed to attend this meeting missed the treat of their lives, and it is sincerely hoped that still larger numbers will be present at the next meeting to be held next January.

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KENTUCKY VETERINARIANS A MOST PROGRESSIVE GROUP

The Kentucky Veterinary Medical Association held its summer meeting at Danville, July 6, 7 and 8. I was there, and I am glad that I was. There is some sort of a difference between the Kentucky meeting and a great many other state meetings that I have attended in past years.

There are one hundred sixty graduate vetinarians in Kentucky, and of this number one hundred twenty-five are members of the state association, and at this summer meeting, during a red-hot spell, there were one hundred seven members and a number of visitors in attendance. This is running commendably strong. Though they meet only twice yearly, every member seems to be acquainted with every other member and the very best of good fellowship and brotherly feeling prevails among them all.

This spirit of brotherhood was nobly exemplified in the case of Dr. H. C. Winnes, who falsely accused of murder, was freed by the efforts of the Kentucky veterinarians led by that indefatigable worker, Dr. E. Calldemeier of Louisville, and his committee, who after seeing the case through one trial, called on the veterinarians of the United States for financial aid for the second trial. This call was responded to most magnanimously. We were told by Dr. Calldemeier that contributions, as a result of the appeal that was published in Veterinary Medicine, came in from every state in the Union and from the most remote parts of the world.

The Kentucky veterinarians are a good-natured, earnest, progressive lot of thinkers and workers; they are endeavoring to elevate themselves and their profession for the welfare of their state and are succeeding.

The state veterinarian, Dr. W. H. Simmons, was in constant attendance at the meeting, and I was impressed by the fealty and loyalty existing between Dr. Simmons and the assistant state veterinarians. I did not hear the words of adverse criticism from the veterinarians of Kentucky towards the state veterinarian, so common in some states.

The hospitality that was shown the writer

was the proverbial southern and especially Kentucky hospitality and needs no further comment.

Their program was replete with good papers, well and carefully written and all were fully and intelligently discussed.—E. L. Q.

Dr. J. W. Roberts of Scales Mound, Ill., recently sold his practice to Dr. G. H. Hines of Atwood, Ill.

Drs. T. R. Jett and J. R. Hill have formed a partnership and will practice at Hopkinsville, Ky.

Dr. Wm. C. Hamilton, Cincinnati Veterinary College, 1909, who has been connected with the U. S. Bureau Animal Industry since 1911, recently resigned his position as Inspector in Charge Virus Serum Control Work at Nashville, Tennessee, to accept a position as Veterinary Director, National Single Bled Serum Company, Plainfield, Indiana.

Dr. George R. White, State Veterinarian of Tennessee, and his Assistants have recently been called on to cope with quite an extensive outbreak of Anthrax in the Western part of the State.

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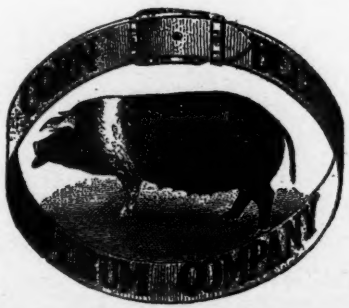

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FOR SALE—Practice, small hospital, home and equipment in the best section of Colorado. Equipment includes equine and canine operating table. House is six-room and completely modern. I will arrange terms on about half. Practice is mixed and runs between seven and nine thousand dollars. Good clean competition and plenty of work for every one. You have to be a good man to hold the work but I will stay and start you right. Good reason for quitting. Address No. 634, Veterinary Medicine, Chicago.

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WANTED—Position as assistant or location by graduate veterinarian, eight years' experience, city and country practice in Central States, clean habits, industrious, have car and instruments. Address No. 637, care of Veterinary Medicine, 53 W. Jackson Blvd., Chicago.

GRADUATE VETERINARIAN desires position—Experienced in general practice. Can do general or mixed or special practice—also laboratory work. Age 26. Consider many kinds of position, or laboratory work. Veterinary teaching, etc. Also consider partnership. Might consider good income practice (or partnership) in Iowa or Colorado. Position considered in many other states. Address 2828 care F. V. Kniest, Peters Trust Bldg., Omaha, Neb.

GRADUATE VETERINARIAN desiring position—Age 29. Four years experience in manufacture of Serum and Vaccines. Large field work experience. Four years practice. Will consider many different kinds of position, also consider practice in Illinois or Missouri. Address 2825 care F. V. Kniest, Peter Trust Bldg., Omaha, Neb.

POSITION DESIRED—By graduate veterinarian; age 36, wide experience for the past ten years. Consider any position, but prefers laboratory, teaching, commercial lines or field position. Address No. 639, care of Veterinary Medicine.

WANTED—Position by recent graduate as assistant. Have had field experience and am capable of handling practice. Have car and equipment. Address No. 638, care of Veterinary Medicine.

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Owners of the Shelton Serum Company of Shelton, Neb., have bought the plant of the Mitchell Serum Company of Mitchell, Neb.

Dr. J. H. Moore, formerly of Wisconsin, has established a modern veterinary hospital in Santa Barbara, Cal.

Dr. W. P. Shoaff has moved from Maroa to Weldon, Ill.

Dr. E. A. Schmoker has moved from Monroe, Wis., to Seattle, Wash., where he has taken a position with the Carnation Cream Company.

Dr. and Mrs. Robt. Conover of Lima, Ohio, announce the arrival of Phyllis Geraldine on August 9, 1921. Both mother and babe are reported doing well.

VIRGINIA VETERINARIANS HEAR DIVERSIFIED PROGRAM

The Virginia Veterinary Association meeting held in Roanoke, Va., July 14-15. This was one of the best summer meetings we have ever held. There were in attendance forty-five members and the papers and addresses were of high order. In arranging the program the secretary took special pains to have different types of livestock represented, such as Beef Cattle, by James McSpadden, a large producer of Angus cattle of Chilhowie, Va, and Dairy Cattle, by F. A. Buchanan, Dairy Husbandman, V. P. I. Poultry Diseases were discussed by B. F. Kaupp of A. & M. College of North Carolina and Poultry, by A. F. Treakle, head of the Poultry Department, V P. I. Animal Parasites were discussed by Dr. B. H. Ransom, B. A. I, and the three tuberculin tests were discussed by Dr J. G. Ferneyhough, State Veterinarian, Richmond. Dr. R. E. Brookbank, Inspector in Charge of Tuberculin Testing in Virginia, discussed accredited herd work. Dr. Foster, Health Officer of Roanoke, discussed municipal sanitation. Very interesting papers were read by Doctors L. K. Spitler, Luray, Va.; John S. Nicholas, Charlottesville; Geo. W. Rawson, Charlottesville; L. O. Price, Blacksburg. Mr. John Wood, secretary, Chamber of Commerce, Roanoke, gave the address of welcome, with response by W. G. Chrisman, secretary of the association.

There were present at the banquet given at

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The next meeting of the association will be in Richmond, January 13-14.—W. G. Chrisman, secretary.
Blaksburg, Va.

MONTANA VETERINARIANS HOLD MEETING AT THE STATE COLLEGE

The 13th annual meeting of the Montana State Veterinary Association was held in Bozeman on July 29-30, 1921.

On Friday, July 29th, the association assembled at the agricultural building of the Montana State College, Prof. C. N. Arnett welcomed the association in behalf of the college and the city of Bozeman.

A clinical demonstration of Montana poisonous plants conducted by Prof. Swingle of the Montana State College, assisted by Drs. Marsh and Welch featured the afternoon session.

In the evening the association met at Three Bears Inn; after its annual banquet. The horse problem in Montana was discussed by Prof. C. N. Arnett, representing the breeder standpoint; Dr. W. J. Butler, from an economical standpoint, and Dr. A D Knowles speaking from the standpoint of the veterinary practitioner

On Saturday, July 30th, Dr. C. N. Arnett, assisted by Prof. Oscar Fretsven and Prof. Millin, gave a very interesting and instructive clinic on the principles of stock judging of beef cattle, horses, dairy cattle and sheep. This number was one of the outstanding features of the session.

Dr. Hadleigh Marsh gave a paper on the pathology of progressive pneumonia in sheep, assisted by a clinical demonstration of lesions by Dr. Howard Welch of Bozeman. Drs. Marsh and Welch have been doing considerable research work on this condition and much

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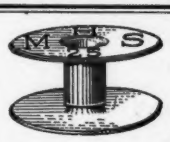

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At 2 p. m. Dr. B. P. Sims of the Oregon State College, presented a clinical demonstration and discussion of sterility in cattle, assisted by Dr. Welch, and with a wealth of clinical material furnished by the veterinary department of the Montana State College this interesting problem of the veterinarians was handled in a most thorough and painstaking manner by Dr. Sims and the association can consider themselves extremely fortunate in having such an able demonstrator of this important economic condition of the live stock industry.

Professor W. F. Schoppe of the Montana State College, concluded the program by a clinical demonstration and lecture on caponizing.

Election of officers for the ensuing year resulted in the choice of Dr. C. H. Stevens of Stevensville, president; Dr. O. L. Devore of Bozeman, vice-president, and Dr. Hadleigh Marsh of Helena, secretary treasurer.

The meeting adjourned to meet in Billings in 1922.—N. T. Gunn, secretary, treasurer.
Butte, Mont.

SUCCESSFUL VETERINARY MEETING IN WESTERN N. Y.

The 7th semi-annual meeting of the Western N. Y. Veterinary Medical Association was held at Hamburg, N. Y., July 14th, Dr. Edward Rafter had prepared a very interesting clinic consisting of cases for diagnosis and operation.

At 1:30 the association adjourned for lunch at Grange Hall, after which the business meeting was called to order by the President, Dr. F. E. McClelland.

Five new members were added to our number, which brings our membership nearly up to the seventy mark.

Dr. J. N. Frost of Cornell University gave a very interesting and instructive address on "Meningitis in Calves," which aroused considerable discussion.

A hatpin in the alimentary tract of a dog was the subject of a paper read by Dr. Chas. D. Blaser, Buffalo, N. Y. It also created considerable discussion and brought out reports of similar experience among the other members.

The annual meeting will be held the second week in December, at Buffalo.—F. F. Fehr,
Buffalo, N. Y. Secy.-Treas.